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ABSTRACT

Information about the courses taken by high school seniors in 1982 and 1987 was analyzed. Data for 1982 came from the high school transcripts collected for the sophomore cohort of High School and Beyond. Data for 1987 came from the high school transcripts of a national sample of 1987 high school seniors in the High School Transcript Study of 1987. Analyses showed the following: (1) in both 1982 and 1987, 98 percent of all high school graduates completed at least one vocational course at some time during high school; (2) between 1982 and 1987, high school students increased the number of academic Carnegie units earned by taking additional courses rather than substituting academic for vocational or other courses; and (3) in 1987, there was no difference between white and black high school graduates in number of units accumulated in vocational education. The amount of vocational education taken by students varied greatly. Business programs were the most popular vocational programs; other programs in descending order of popularity were as follows: trade and industry, technical and communication, occupational home economics, marketing and distribution, agriculture, and health. In both years, as the amount of vocational education taken by students increased, students tended to take fewer units of advanced English, math, science, fine arts, and foreign language. (Eight tables and five figures are provided. Appendixes include methodology and technical notes, standard errors and unweighted Ns, and 21 supplementary tables.) (YLB)

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Statistical Analysis Report January 1992

# Participation in Secondary Vocational Education, 1982–87

## Contractor Report

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NATIONAL CENTER FOR EDUCATION STATISTICS

Statistical Analysis Report January 1992

# Participation in Secondary Vocational Education, 1982–87

## Contractor Report

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U.S. Department of Education
Office of Educational Research and Improvement NCES 91-667

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## Highlights

This report describes the use of the vocational education curriculum by high school graduates in 1982 and 1987. Additionally, it examines how students' use of the academic curriculum changed as the amount of vocational education taken increased. Some major highlights of the report are the following:

• In both 1982 and 1987, 98 percent of all high school graduates completed at least one vocational education course at some time during their high school careers. More than three-fourths of all graduates enrolled in courses defined as general labor market preparation, approximately 85 percent enrolled in courses designed for specific labor market preparation, and about half participated in consumer and home economics.

• Between 1982 and 1987, high school students increased the number of academic Carnegie units earned. (A Carnegie unit is equivalent to one year-long course.) However, they accomplished this increase by taking additional courses rather than by substituting academic courses for vocational or personal/other courses.

• In 1982, high school graduates accumulated an average of 21.3 Carnegie units—14.1 units in academic subjects, 4.6 in vocational subjects, and 2.6 in personal use courses.

• By 1987, the total number of units earned increased to 22.2. Average academic units increased 1.5 units from 14.1 in 1982 to 15.6. The average number of vocational units decreased slightly from 4.6 to 4.4 units, with the decline concentrated in consumer and home economics, industrial arts, and career education.

• In 1987, there was no difference between white and black high school graduates in the number of units accumulated in vocational education. Asian graduates earned about 1.6 units of vocational education less than white and black graduates.

• The amount of vocational education taken by students varied greatly. In 1987, for example, 5.8 percent of graduates earned less than one unit in vocational education, 12.3 percent earned from one to two units, 27.4 percent from two to four units, 12.8 percent from four to five units, 11.5 percent from five to six units, and 30.3 percent six units or more.

• In 1987, high school graduates averaged 0.68 Carnegie units in consumer and home economics, 0.17 units in industrial arts, 0.18 units in career education, 1.01 units in general labor market preparation, and 2.93 units in specific labor market preparation.

• Business programs were the most popular vocational programs, with 53.8 percent of high school graduates earning units in business in 1987. Thirty-seven percent participated in trade and industry programs, 24.7 percent in technical and communication programs, 10.6 percent in occupational home economics, 8.7 percent in marketing and distribution, 8.0 percent in agriculture, and 4.9 percent in health.

• In both 1982 and 1987, as the amount of vocational education taken by students increased, students tended to take fewer units in advanced English, math, science, fine arts, and foreign language. Students who earned eight or more units in vocational education took significantly fewer units of basic math, science, English, and social studies.

# Foreword

This report uses information about the courses taken by high school seniors in 1982 and 1987. Data for 1982 came from the high school transcripts collected for the sophomore cohort of High School and Beyond (HS&B). Data for 1987 came from the high school transcripts of a national sample of 1987 high school seniors in the High School Transcript Study of 1987 (HSTS). The report describes patterns of participation in the secondary school curriculum in 1982 and 1987 and analyzes changes over time for public high school graduates.

Transcripts are a rich source of information on courses taken by students, providing information far superior to data that rely on students to recall and report on courses taken. The report uses a taxonomy of the secondary curriculum to apply consistent definitions of the academic and vocational curriculum to both sets of transcripts and to measure changes over time. The report describes patterns of course taking for all high school graduates and by sex and racial/ethnic category.

We hope that this report will inspire other researchers to use these data to pursue their own interests. The National Center for Education Statistics (NCES) can make computer tapes available to those wishing to conduct their own analyses of the data. NCES also maintains a large set of summary statistics in a microcomputer database. Statistics contained in the database cover the same topics described in this report but in much greater detail.

Information about obtaining HS&B or HSTS computer tapes is available from the U.S. Department of Education, Office of Educational Research and Improvement, Information Technology Branch, 555 New Jersey Avenue NW, Room 215, Capitol Place Building, Washington, DC 20208-1227.

Jeanne Griffith
Associate Commissioner
Data Development Division

John Ralph
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Policy and Review Branch

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Numerous members of the staff of the National Center for Education Statistics provided assistance in reviewing various parts of the report. Mark Schwarz, now with the Office of Vocational and Adult Education, assisted with the early conceptualization of the study. Jim Houser and Mary Frase carefully reviewed early drafts. Susan Ahmed provided important statistical advice. Special appreciation is extended to three reviewers of the final draft: Robert Meyer of the University of Wisconsin; and Andrew Kolstad and Jeffrey Owings of the National Center for Education Statistics.

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## Introduction

Spurred in large measure by the publication of *A Nation At Risk* in 1983 and a series of subsequent reports urging major education reform, many states took concerted action to strengthen the secondary curriculum during the 1980s. Some of these measures included increasing graduation requirements, introducing more rigorous curricula, lengthening the school day and year, and proposing a variety of other reforms. With a few exceptions, most of these steps were designed to improve the academic curriculum—with the goal of raising standards for math, science, reading, literature, and social sciences. However, explicit statewide efforts to bolster the vocational curriculum have, for the most part, been absent. In fact, many vocational educators assert that this inactivity has led to a significant decline in the number of students taking vocational education courses and in the average number of credits these students earn in the vocational curriculum.

Until recently, nationally representative data including two points in time were not available for assessing changes in high school course-taking patterns during the 1980s. However, the completion of the High School Transcript Study (HSTS) for the class of 1987, along with the high school transcripts from the High School and Beyond (HS&B) survey of the class of 1982, provided the first opportunity to conduct this kind of analysis on a national scale.[1] In 1989, a detailed analysis of these two transcript studies was conducted for the National Assessment of Vocational Education (NAVE).[2] This report summarizes and amplifies this earlier study by addressing the following questions:

- What percentage of public high school graduates completed at least one course in vocational education? Did this percentage change from 1982 to 1987?
- How much vocational education did secondary students take? Did this amount change from 1982 to 1987?
- In what types of vocational programs did high school graduates enroll? Did these patterns change from 1982 to 1987?
- As participation in vocational education increased, how did participation in the academic curriculum change? Did these patterns change from 1982 to 1987?

Answering these questions requires a clear conception of what kinds of courses are offered in the vocational education curriculum. Consequently, the report begins by discussing the classification system adopted for this analysis and establishes some basic definitions. It then reports major findings and conclusions. In addition, Appendix A provides additional information on the surveys and methodology used. Appendix B

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[1]Both surveys were conducted by the National Center for Education Statistics. For information on content and methodology used, see National Center for Education Statistics, *High School and Beyond 1980 Sophomore Cohort, Data File User's Manuals* (Washington, D.C.: U.S. Department of Education, National Center for Education Statistics); National Center for Education Statistics, *1987 High School Transcript Study, Data File User's Manual,* (Washington, D.C.: U.S. Department of Education, National Center for Education Statistics, February 1989).

[2]John E. Tuma et al., *Course Enrollments in Secondary Vocational Education,* NAVE Contractor Report (Berkeley: MPR Associates, April 1989). Also see National Assessment of Vocational Education, *Final Report, Volume I, Summary of Findings and Recommendations* (Washington, D.C.: U.S. Department of Education, July 1989).

presents the standard errors and unweighted Ns for tables included in the main text. Finally, Appendix C contains supplementary tables on 1982 and 1987 high school graduates. The information on 1982 graduates includes data on the relationship between participation in vocational education and such variables as socioeconomic status and family income. The information on 1987 graduates' participation in vocational education includes such variables as school size and high school grades.

## What is Vocational Education? A Secondary School Taxonomy of Courses

Under federal law, vocational education is defined as "organized educational programs offering a sequence of courses which are directly related to the preparation of individuals in paid or unpaid employment in current or emerging occupations requiring other than a baccalaureate or advanced degree."[3] The definition encompasses a wide variety of classes teaching academic skills, work attitudes, general employability skills, and occupationally specific skills. In addition, it includes applied technology education. Spanning such a broad array of courses, vocational education not only needs to be distinguished clearly from nonvocational courses but also requires some internal structure for classifying different kinds of vocational courses.

MPR Associates' efforts to develop a system for distinguishing vocational from nonvocational courses began in 1986, when MPR Associates constructed a taxonomy for NCES to analyze the vocational education course-taking patterns of the 1980 sophomores in HS&B.[4] Subsequently, for the National Assessment of Vocational Education (NAVE), MPR Associates revised this taxonomy to include the full secondary curriculum, including vocational and nonvocational courses. The taxonomy was used to describe the course-taking patterns of the 1980 sophomores and some of the ways in which the vocational and nonvocational curriculum interact.[5] Most recently, MPR Associates applied this taxonomy to four sources of transcript data—the Educational Testing Service's Study of Academic Prediction and Growth, the U.S. Department of Labor's National Longitudinal Study of Youth, High School and Beyond, and the 1987 High School Transcript Study—to develop time series information on how course-taking patterns changed between 1969 and 1987.[6]

Figure 1 displays the taxonomy used in this report. At the most basic level, it divides the secondary curriculum into three parts: academic, vocational, and personal/other.[7] Next, the academic curriculum is subdivided into six main subject areas: mathematics, science, English, social studies, fine arts, and foreign languages. Within

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[3]The Carl D. Perkins Vocational and Applied Technology Amendments of 1990, Public Law 101-392, sec. 521 (41).

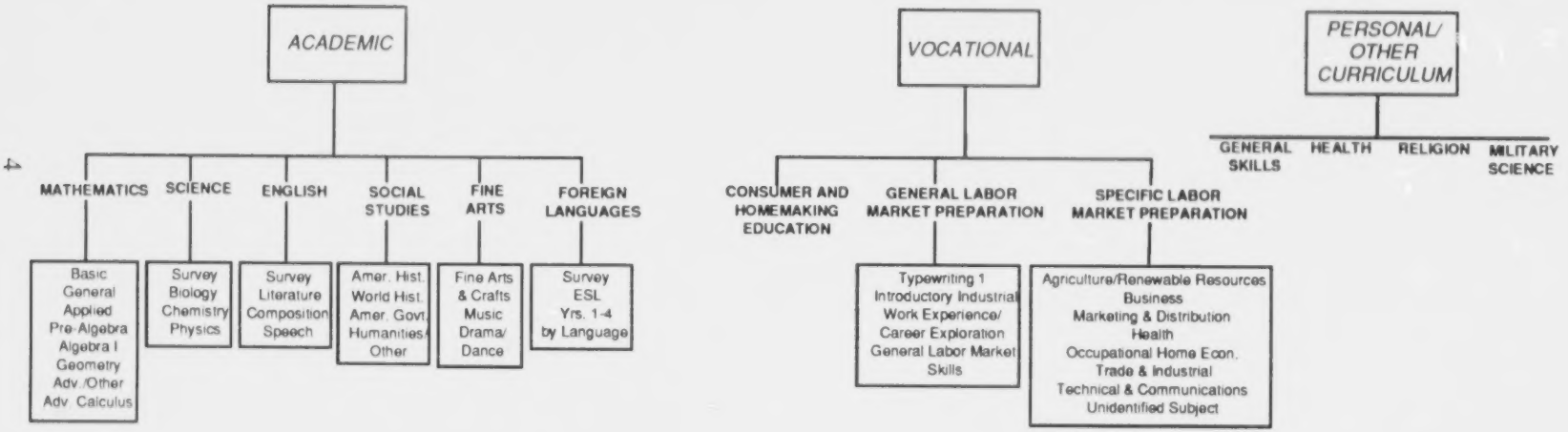
[4]E. Gareth Hoachlander and Susan P. Choy, *High School and Beyond: Classifications of Secondary Vocational Education Courses and Students*, a report prepared for the Center for Education Statistics, U.S. Department of Education (Berkeley: MPR Associates, November 1986).

[5]E. Gareth Hoachlander, Cynthia L. Brown, and John E. Tuma, *Measuring High School Curricular Experiences: Implications for Vocational Education*, a report prepared for the National Assessment of Vocational Education, Office of Planning, Budget, and Evaluation, U.S. Department of Education (Berkeley: MPR Associates, December 1987). Antoinette G. Gifford, E. Gareth Hoachlander, and John E. Tuma, *The Secondary School Taxonomy Final Report*, a report prepared for the National Assessment of Vocational Education, U.S. Department of Education (Berkeley: MPR Associates, February 1989).

[6] John E. Tuma, Antoinette G. Gifford, Dean Harde, E. Gareth Hoachlander, and Laura Horn, *Course Enrollment Patterns in Public and Private Secondary Schools, 1975 to 1987*, a compendium of high school enrollment data prepared for the National Assessment of Vocational Education, Office of Planning, Budget, and Evaluation, U.S. Department of Education, (Berkeley: MPR Associates, February 1989).

[7]For a detailed description of this taxonomy, see Antoinette G. Gifford, E. Gareth Hoachlander, and John E. Tuma, *The Secondary School Taxonomy Final Report*, a report prepared for the National Assessment of Vocational Education, Office of Planning, Budget, and Evaluation, U.S. Department of Education (Berkeley: MPR Associates, February 1989).

## Figure 1.--Organization of the Secondary School Taxonomy


ACADEMIC
MATHEMATICS
SCIENCE
ENGLISH
SOCIAL STUDIES
FINE ARTS
FOREIGN LANGUAGES
Basic General Applied Pre-Algebra Algebra I Geometry Adv./Other Adv. Calculus
Survey Biology Chemistry Physics
Survey Literature Composition Speech
Amer. Hist. World Hist. Amer. Govt. Humanities/ Other
Fine Arts & Crafts Music Drama/ Dance
Survey ESL Yrs. 1-4 by Language
VOCATIONAL
CONSUMER AND HOMEMAKING EDUCATION
GENERAL LABOR MARKET PREPARATION
SPECIFIC LABOR MARKET PREPARATION
Typewriting 1 Introductory Industrial Work Experience/ Career Exploration General Labor Market Skills
Agriculture/Renewable Resources Business Marketing & Distribution Health Occupational Home Econ. Trade & Industrial Technical & Communications Unidentified Subject
PERSONAL/ OTHER CURRICULUM
GENERAL SKILLS
HEALTH
RELIGION
MILITARY SCIENCE





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these six subject areas, the taxonomy is used to distinguish among topical concentrations and, when possible, among levels of coursework.

The vocational curriculum is divided into three curricular areas: 1) consumer and homemaking education, 2) general labor market preparation, and 3) specific labor market preparation. Consumer and homemaking courses provide training and skills that are often necessary for activities outside of the paid labor force. Classes which impart basic skills that can be applied in a variety of personal or occupational settings are included in general labor market preparation. Classes in general labor market preparation include such courses as beginning typing, industrial arts, work experience and career exploration, business math, and business English. Grouped together, general labor market preparation and consumer and homemaking courses make up the non-occupationally specific vocational education curriculum. Specific labor market preparation includes introductory, advanced, and elective courses in eight vocational areas: agriculture, business, marketing and distribution, health, occupational home economics, trade and industry, and technical and communication.

The personal and other curriculum is further divided into four categories: general skills, health (nonvocational), religion, and military science. General skills include such courses as physical education and driver's education.

The analysis uses this taxonomy to distinguish vocational education from nonvocational education and to examine varying degrees of participation in the different parts of the curriculum. Such an approach is necessary because states and localities differ greatly in defining what kinds of courses are included in the vocational education curriculum. This wide variation results partially from long-standing, but largely unsuccessful, efforts to clearly define which high school students should be considered "vocational" and counted accordingly. The following example may help to illustrate this problem. In many high schools, students take Typing I, which is taught in the Business Department and is often the first in a sequence of vocational courses provided in a number of vocational business programs. Hence, this course would seem to belong in the vocational curriculum. However, large proportions of students who never take any other business courses enroll in Typing I. For these students, their primary objective is to learn keyboard skills that can be used in other pursuits. Should such students be counted as vocational students? If not, how can these students be distinguished *a priori* from other students in Typing I who will later take other courses in business or other vocational programs? Short of relying on statements of student objectives or waiting until they leave school to retrospectively identify vocational students by examining their course-taking patterns, there is no accurate way to distinguish these students.

Similar problems arise in other introductory vocational courses—for example, auto mechanics, cosmetology, or home economics—that attract students who are primarily interested in acquiring skills for personal use rather than for paid employment. If the number of vocational education students are to be counted, rather arbitrary decisions must be made about how to handle enrollment in these introductory courses. Various states have made these decisions differently, and consequently the enrollment data they report have never been comparable.

In this report, the analysis deliberately avoids trying to count the number of vocational education students. Of course, with transcripts, it is possible to adopt a uniform definition of a vocational student, based, for example, on some minimum number of vocational courses or on students completing various sequences of courses. Applying this same definition to the two sets of transcripts would permit accurate analysis of changes over time. However, the definition would still be arbitrary, with no theoretical or empirical

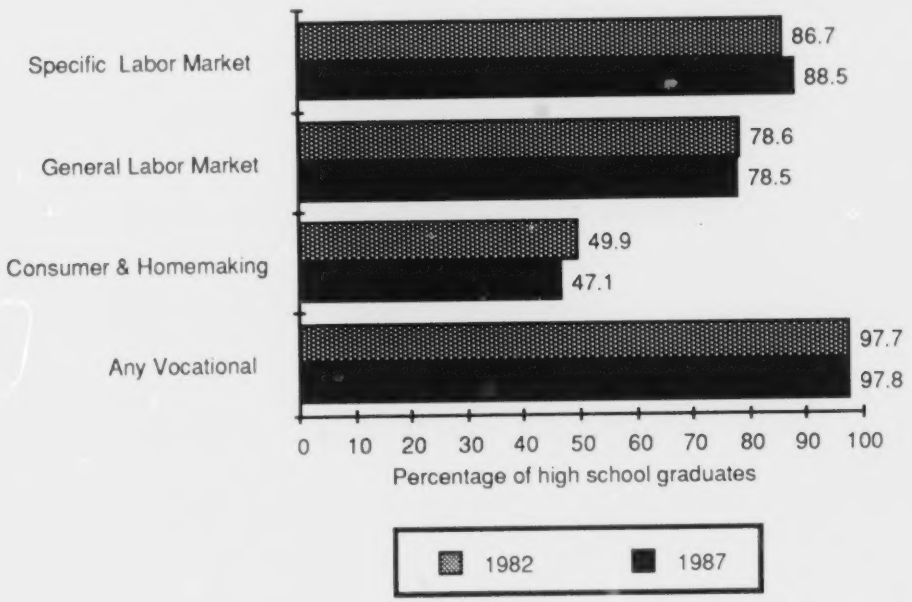
basis for establishing what the minimum number or sequence of courses should be. Consequently, this analysis examines the participation of all high school graduates in the various parts of the high school curriculum. It reports both the percentage of high school graduates taking different types of courses and the average number of Carnegie units accumulated during grades 9 through 12.[8]

[8]A Carnegie unit is the equivalent of taking a one period course five times per week for the entire academic school year.

## Patterns of Participation in Vocational Education

Almost all high school graduates participated in vocational education at some point during grades 9 through 12 (figure 2). In 1987, about 98 percent of high school seniors had taken at least one course in vocational education, virtually the same percentage as in 1982 (table 1). More than three-fourths of the students took courses in general labor market preparation, and more than 85 percent took courses in specific labor market preparation. About one-half, 47 percent in 1987 and 50 percent in 1982, participated in consumer and homemaking courses.[9]

**Figure 2.--Percentage of high school graduates taking vocational education at some time during grades 9 through 12: 1982 and 1987**




SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

[9]Course-taking patterns are a function not only of student choices but also of actual course offerings. Hence, throughout, the reader should remember the availability of certain courses, or lack thereof, influences what students take.

**Table 1.--Percentage of high school graduates enrolled in vocational education: 1982 and 1987**

| | All vocational education | Consumer and homemaking | General labor market preparation | Specific labor market preparation |
|---|---|---|---|---|
| | | | **1982 graduates** | |
| Total | 97.7 | 49.9 | 78.6 | 86.7 |
| Sex | | | | |
| Male | 97.5 | 33.7 | 71.3 | 89.5 |
| Female | 97.8 | 65.0 | 85.4 | 84.0 |
| Race/ethnicity | | | | |
| White | 97.2 | 47.6 | 79.2 | 86.2 |
| Black | 99.2 | 60.4 | 76.1 | 87.0 |
| Hispanic | 99.0 | 55.9 | 76.9 | 89.6 |
| Asian | 96.0 | 34.9 | 78.2 | 77.9 |
| Native American | 99.4 | 50.6 | 84.8 | 93.5 |
| | | | **1987 graduates** | |
| Total | 97.8 | 47.1 | 78.5 | 88.5 |
| Sex | | | | |
| Male | 97.9 | 34.5 | 73.9 | 91.3 |
| Female | 97.7 | 59.0 | 82.9 | 85.9 |
| Race/ethnicity | | | | |
| White | 97.8 | 46.2 | 79.4 | 88.2 |
| Black | 98.7 | 53.6 | 77.7 | 88.3 |
| Hispanic | 97.8 | 51.2 | 76.5 | 89.1 |
| Asian | 93.6 | 36.6 | 69.7 | 82.8 |
| Native American | 98.4 | 51.1 | 78.0 | 92.2 |

SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

Girls were more likely than boys to have enrolled in consumer and homemaking education courses, but about one-third of the boys took courses in consumer and homemaking education in 1982 and 1987. Girls were also more likely to have taken general labor market preparation courses than were boys in 1982, 85 percent versus 71 percent, but more boys took courses in specific labor market preparation, 90 percent versus 84 percent in 1982. A similar pattern existed in 1987.

Among different racial and ethnic groups in 1987, it appears that lower percentages of Asian students than other groups generally participated in vocational education, but these

differences were not statistically significant.[10] Overall, 93 percent of Asians took at least one vocational education course, compared with 98 percent to 99 percent of other racial and ethnic groups. Only 37 percent of Asians participated in consumer and homemaking education, compared with 46 percent of white students, 54 percent of blacks and 51 percent of Hispanics. (Although it appears that a higher percentage of Native Americans, 51 percent, also participated in consumer and homemaking, this difference was not statistically significant.) Similarly, Asian students also appeared to participate less in the general labor market preparation and specific labor market preparation courses than did other students, but these differences were not consistently significant.

From 1982 to 1987, there were no major changes in the percentages of students who participated in vocational education. In both years, about half of the students participated in consumer and homemaking. The percentage of students taking general labor market preparation courses remained unchanged at about 79 percent, as did the percentage taking specific labor market preparation courses, about 87 percent.

Table 2 displays the average number of Carnegie units accumulated by high school graduates in 1982 and 1987. Overall, students in 1987 earned a total of 22.8 Carnegie units, up 1.5 units from 21.3 in 1982. The average number of academic units earned increased 1.5 units, from 14.1 in 1982 to 15.6 in 1987. The average number of vocational units remained about the same, 4.6 units in 1982 and 4.4 units in 1987. Carnegie units accumulated in the personal use courses remained constant at about 2.6 units. In short, between 1982 and 1987, students increased the number of academic units earned. However, they accomplished this increase by taking additional courses rather than substituting academic courses for vocational or personal/other courses (Figure 3).

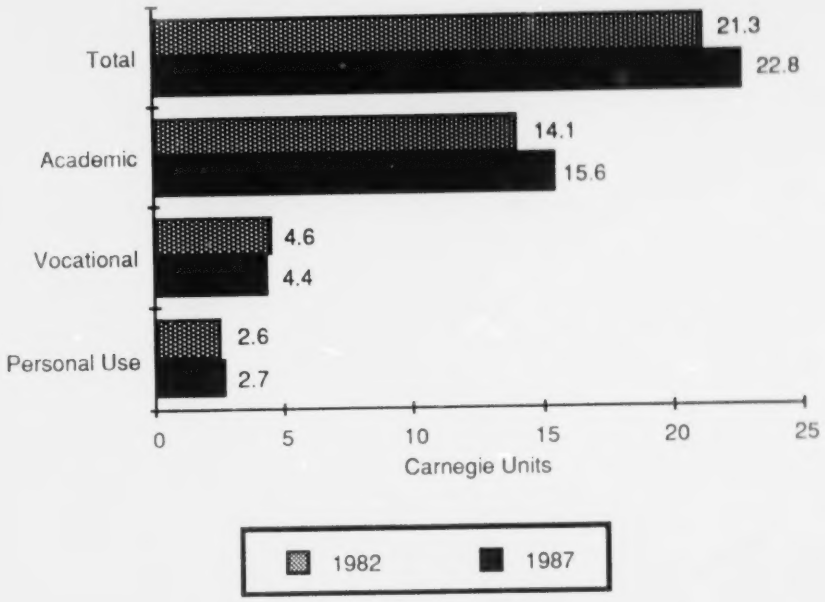
[10]In all tables, data reported for whites and blacks exclude white and black Hispanics, for whom data are reported in the Hispanic category. Data for Native Americans include both American Indians and Alaskan Natives. Data for Asians include both Asians and Pacific Islanders.

**Table 2.--Average number of Carnegie units earned by high school graduates: 1982 and 1987**

| | Total | Academic | Vocational | Personal/other |
|---|---|---|---|---|
| | | **1982 graduates** | | |
| Total | 21.34 | 14.10 | 4.62 | 2.59 |
| Sex | | | | |
| Male | 21.21 | 13.85 | 4.61 | 2.72 |
| Female | 21.46 | 14.33 | 4.64 | 2.47 |
| Race/ethnicity | | | | |
| White | 21.41 | 14.35 | 4.52 | 2.53 |
| Black | 21.03 | 13.62 | 4.79 | 2.58 |
| Hispanic | 21.12 | 12.92 | 5.26 | 2.87 |
| Asian | 22.07 | 15.84 | 3.13 | 3.07 |
| Native American | 21.32 | 13.29 | 5.10 | 2.90 |
| | | **1987 graduates** | | |
| Total | 22.77 | 15.64 | 4.43 | 2.70 |
| Sex | | | | |
| Male | 22.65 | 15.28 | 4.52 | 2.84 |
| Female | 22.89 | 15.98 | 4.36 | 2.56 |
| Race/ethnicity | | | | |
| White | 22.91 | 15.74 | 4.52 | 2.64 |
| Black | 22.14 | 14.96 | 4.47 | 2.71 |
| Hispanic | 22.54 | 15.07 | 4.27 | 3.20 |
| Asian | 23.88 | 17.76 | 2.92 | 3.21 |
| Native American | 23.15 | 15.33 | 4.70 | 3.13 |

SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

**Figure 3.--Accumulation of Carnegie units: 1982 to 1987**




SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

At this level of generality in the curriculum, there were no major differences between boys and girls in the number of Carnegie units accumulated. Among racial and ethnic groups, however, there were some significant differences. In 1987, Asian students earned about two more Carnegie units in academic subjects than did students in other racial and ethnic groups. Asian students earned considerably fewer units in vocational education than other groups—2.9 units compared with 4.5 for whites and blacks, 4.3 for Hispanics, and 4.7 for Native Americans (table 2).

Students varied greatly in the amount of vocational education they took. As shown in Table 3, in 1987, about 6 percent of high school graduates took less than one Carnegie unit in vocational education. Twelve percent took between one and two units, 27 percent took between two and four units, 24 percent took between four and six units, and 30 percent took more than six units. These patterns were similar for boys and girls.

There is a widespread perception that minority students take more vocational education than white students, but some of the data for 1982 and particularly the data for 1987 did not support this generalization. In 1982, about 40 percent of Hispanic and Native American students took six or more units of vocational education, compared with 32 percent of white students and only 13 percent of Asian students. In 1987, however, there was virtually no difference in the percentages of white, black, Hispanic, and Native American students taking six or more units, while a much lower percentage of Asians took six or more units.

**Table 3.--Percentage of high school graduates earning varying number of Carnegie units in vocational education: 1982 and 1987**

| | 0 units | .01-.9 units | 1-1.9 units | 2-2.9 units | 3-3.9 units | 4-4.9 units | 5-5.9 units | 6-6.9 units | 7-7.9 units | 8+ units |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | **1982 graduates** | | | | | |
| Total | 2.3 | 3.8 | 11.5 | 12.4 | 12.4 | 12.8 | 11.8 | 9.8 | 8.5 | 14.7 |
| Sex | | | | | | | | | | |
| Male | 2.5 | 3.7 | 11.4 | 12.9 | 12.1 | 13.8 | 11.1 | 8.7 | 9.2 | 14.5 |
| Female | 2.2 | 4.0 | 11.5 | 12.0 | 12.7 | 11.8 | 12.4 | 10.8 | 7.9 | 14.9 |
| Race/ethnicity | | | | | | | | | | |
| White | 2.8 | 4.6 | 12.1 | 12.6 | 12.7 | 12.1 | 11.3 | 9.2 | 8.4 | 14.4 |
| Black | 0.8 | 1.3 | 10.0 | 11.5 | 13.2 | 16.4 | 15.1 | 10.2 | 7.5 | 14.1 |
| Hispanic | 1.0 | 1.5 | 7.9 | 11.3 | 10.5 | 14.4 | 11.9 | 12.2 | 10.0 | 19.3 |
| Asian | 4.0 | 8.2 | 20.2 | 18.4 | 14.3 | 13.4 | 8.3 | 5.3 | 3.5 | 4.5 |
| Native American | 0.6 | 2.7 | 7.3 | 11.0 | 9.1 | 9.7 | 20.4 | 18.0 | 9.0 | 12.1 |
| | | | | | **1987 graduates** | | | | | |
| Total | 2.2 | 3.5 | 12.3 | 14.4 | 13.0 | 12.8 | 11.5 | 9.1 | 8.0 | 13.2 |
| Sex | | | | | | | | | | |
| Male | 2.1 | 3.1 | 11.9 | 14.5 | 12.7 | 12.5 | 12.3 | 8.7 | 8.2 | 14.0 |
| Female | 2.4 | 3.9 | 12.6 | 14.3 | 13.2 | 13.2 | 10.7 | 9.4 | 7.9 | 12.5 |
| Race/ethnicity | | | | | | | | | | |
| White | 2.2 | 3.6 | 12.2 | 13.9 | 12.7 | 12.5 | 11.2 | 8.9 | 8.1 | 14.8 |
| Black | 1.3 | 3.4 | 10.9 | 12.6 | 13.2 | 14.5 | 13.6 | 10.2 | 9.8 | 10.7 |
| Hispanic | 2.2 | 2.3 | 11.4 | 15.6 | 14.5 | 13.5 | 13.7 | 10.9 | 7.5 | 8.5 |
| Asian | 6.4 | 5.4 | 20.6 | 24.2 | 15.7 | 10.3 | 6.3 | 4.9 | 2.6 | 3.6 |
| Native American | 1.6 | 1.4 | 5.9 | 14.9 | 14.3 | 15.4 | 15.2 | 9.8 | 10.0 | 11.5 |

SOURCE: National Center for Education Statistics, High School and Beyond, Sophomore Cohort; 1987 High School Transcript Study.

Table 4 displays the average number of Carnegie units earned by high school graduates within the major divisions of vocational education. Overall, students in 1987 earned 0.6 units in consumer and homemaking education, 0.1 units in industrial arts, 0.1 units in career education, 0.9 units in all general labor market preparation, and 2.9 units in specific labor market preparation.[11] In other words, total vocational units declined from 4.6 in 1982 to 4.4 in 1987. This decline occurred mainly in consumer and homemaking

[11]Recall from the taxonomy that general labor market preparation includes industrial arts, career education and such general skills courses as beginning typing, business math, and business English, while specific labor market preparation consists of courses designed to teach specific occupational skills.

education, industrial arts, and career education (table 4). Participation in specific labor market preparation remained constant at 2.9 units.

However, boys and girls showed different patterns of course-taking. In 1987 girls earned 0.9 units in consumer and homemaking education, compared with 0.3 units for boys. Industrial arts was overwhelmingly the province of boys: they averaged a quarter of a unit in industrial arts, while girls hardly participated at all. Boys also earned significantly more units in specific labor market preparation, averaging 3.3 units compared with an average of 2.6 for girls. There were no statistically significant differences in the number of units earned by girls and boys in career education and total general labor market preparation courses. These same patterns were also present in 1982.

**Table 4.--Average number of Carnegie units earned in different types of vocational education: 1982 and 1987**

| | Consumer and homemaking | General labor market preparation | | | Specific labor market preparation |
|---|---|---|---|---|---|
| | | Industrial arts | Career education | Total* | |
| | | | **1982 graduates** | | |
| Total | 0.68 | 0.17 | 0.18 | 1.01 | 2.93 |
| Sex | | | | | |
| Male | 0.30 | 0.31 | 0.19 | 0.96 | 3.35 |
| Female | 1.02 | 0.04 | 0.17 | 1.07 | 2.55 |
| Race/ethnicity | | | | | |
| White | 0.62 | 0.16 | 0.15 | 0.99 | 2.90 |
| Black | 0.90 | 0.12 | 0.26 | 1.03 | 2.85 |
| Hispanic | 0.87 | 0.24 | 0.28 | 1.15 | 3.24 |
| Asian | 0.29 | 0.11 | 0.25 | 0.92 | 1.92 |
| Native American | 0.54 | 0.22 | 0.17 | 1.10 | 3.46 |
| | | | **1987 graduates** | | |
| Total | 0.60 | 0.14 | 0.14 | 0.93 | 2.90 |
| Sex | | | | | |
| Male | 0.33 | 0.25 | 0.14 | 0.90 | 3.29 |
| Female | 0.86 | 0.03 | 0.14 | 0.95 | 2.55 |
| Race/ethnicity | | | | | |
| White | 0.60 | 0.15 | 0.12 | 0.94 | 2.99 |
| Black | 0.73 | 0.13 | 0.20 | 0.98 | 2.77 |
| Hispanic | 0.60 | 0.11 | 0.25 | 0.97 | 2.70 |
| Asian | 0.34 | 0.04 | 0.11 | 0.69 | 1.88 |
| Native American | 0.64 | 0.17 | 0.05 | 0.87 | 3.19 |

*Includes basic skills courses such as beginning typing and business math, as well as career education and industrial arts.

SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

Asians earned considerably fewer units than any other racial-ethnic group in all areas of vocational education except career education and total general labor market preparation. In specific labor market preparation courses, Asians earned about one Carnegie unit less than all other racial-ethnic groups in both 1982 and 1987. In both 1982 and 1987, black and Hispanic students accumulated significantly more units than whites in consumer and homemaking education and career education.

Because specific labor market preparation courses are the vocational courses designed specifically for preparing students for paid employment, it is useful to examine the number of credits accumulated in this vocational area alone. Table 5 shows that in both 1982 and 1987, about 20 percent of high school graduates earned less than one Carnegie unit in specific labor market preparation courses, 20 percent earned between one and two units, 29 percent earned between two and four units, and 32 percent earned four or more units. Boys were more likely than girls to earn four or more specific labor market preparation units. Asians were much less likely to have earned four or more units than were students from other racial and ethnic groups.

**Table 5.--Percentage of high school graduates earning varying numbers of Carnegie units in specific labor market preparation courses: 1982 and 1987**

| | 0 units | .01-.9 units | 1-1.9 units | 2-2.9 units | 3-3.9 units | 4 or more units |
|---|---|---|---|---|---|---|
| | | | **1982 graduates** | | | |
| Total | 13.3 | 7.4 | 18.1 | 16.3 | 13.1 | 31.8 |
| Sex | | | | | | |
| Male | 10.5 | 6.7 | 15.8 | 15.6 | 13.6 | 37.9 |
| Female | 16.0 | 8.1 | 20.3 | 16.9 | 12.6 | 26.1 |
| Race/ethnicity | | | | | | |
| White | 13.8 | 7.5 | 18.5 | 16.1 | 12.5 | 31.5 |
| Black | 13.0 | 7.2 | 17.7 | 18.4 | 13.8 | 29.9 |
| Hispanic | 10.4 | 6.6 | 16.1 | 15.9 | 16.1 | 34.9 |
| Asian | 22.1 | 9.6 | 21.5 | 17.8 | 11.2 | 17.8 |
| Native American | 6.5 | 3.9 | 16.5 | 11.9 | 16.1 | 45.1 |
| | | | **1987 graduates** | | | |
| Total | 11.5 | 7.6 | 20.2 | 16.1 | 13.2 | 31.6 |
| Sex | | | | | | |
| Male | 8.7 | 6.4 | 18.1 | 16.2 | 13.8 | 36.9 |
| Female | 14.2 | 8.7 | 22.1 | 16.0 | 12.5 | 26.5 |
| Race/ethnicity | | | | | | |
| White | 11.8 | 7.0 | 19.5 | 16.0 | 13.1 | 32.8 |
| Black | 11.7 | 8.4 | 19.3 | 15.3 | 14.8 | 30.6 |
| Hispanic | 10.9 | 7.0 | 21.2 | 18.5 | 13.0 | 29.4 |
| Asian | 17.2 | 11.3 | 25.8 | 24.1 | 9.0 | 12.7 |
| Native American | 7.8 | 3.1 | 20.5 | 17.3 | 13.8 | 37.5 |

SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

Table 6 displays the percentages of high school graduates participating in the major programmatic areas of specific labor market preparation in 1987. The most popular program was business, an area in which 54 percent of high school graduates took at least one course (figure 4). Trade and industry programs attracted the next highest percentage of students, 38 percent, mostly in the precision production programs. For the most part, these patterns differed little from those existing in 1982. However, the percentage of students participating in technical and communication programs was up substantially, from 13 percent in 1982 to 25 percent in 1987 (table 6).

**Table 6.--Percentage of high school graduates participating in specific labor market preparation courses, by program area: 1982 and 1987**

| | Agriculture | Business | Marketing and distribution | Health* | Occupational home economics |
|---|---|---|---|---|---|
| | | | **1982 graduates** | | |
| Total | 9.9 | 52.9 | 9.1 | 4.5 | 11.5 |
| Sex | | | | | |
| Male | 14.7 | 38.5 | 8.5 | 3.2 | 4.6 |
| Female | 5.5 | 66.4 | 9.6 | 5.7 | 17.9 |
| Race/ethnicity | | | | | |
| White | 10.2 | 53.6 | 8.9 | 4.0 | 11.3 |
| Black | 7.2 | 52.6 | 12.0 | 7.2 | 13.4 |
| Hispanic | 11.4 | 53.4 | 8.4 | 4.9 | 12.1 |
| Asian | 4.3 | 37.3 | 3.1 | 5.0 | 4.8 |
| Native American | 15.0 | 41.2 | 7.8 | 5.5 | 8.7 |
| | | | **1987 graduates** | | |
| Total | 8.0 | 53.8 | 8.7 | 4.9 | 10.6 |
| Sex | | | | | |
| Male | 12.5 | 42.5 | 7.4 | 2.7 | 5.2 |
| Female | 3.8 | 64.6 | 9.9 | 6.9 | 15.6 |
| Race/ethnicity | | | | | |
| White | 9.4 | 53.5 | 8.1 | 4.5 | 10.2 |
| Black | 5.8 | 54.2 | 9.6 | 6.1 | 12.4 |
| Hispanic | 4.1 | 53.3 | 9.6 | 7.0 | 10.9 |
| Asian | 0.4 | 46.1 | 8.1 | 9.5 | 4.5 |
| Native American | 10.5 | 64.7 | 4.0 | 7.7 | 7.2 |

*"Health" includes only vocational courses preparing students for work in health fields. General health or personal health courses are classified as "personal/other."

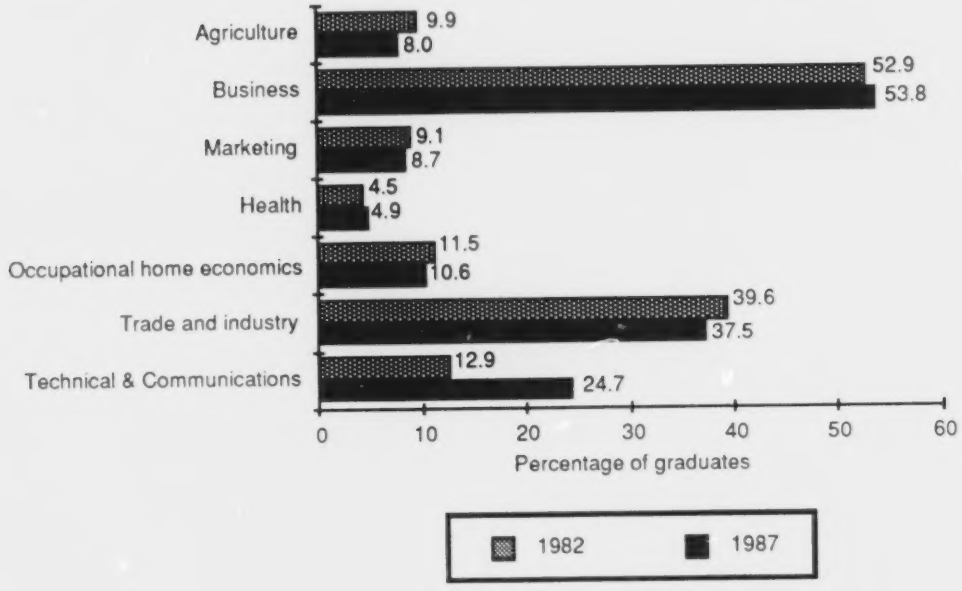
SOURCE: National Center for Education Statistics, High School and Beyond, Sophomore Cohort; 1987 High School Transcript Study.

**Table 6.--Percentage of high school graduates participating in specific labor market preparation courses, by program area: 1982 and 1987--Continued**

| | All programs | Trade and industry | | | Technical and communications |
|---|---|---|---|---|---|
| | | Construction | Precision production | Other | |
| | | | **1982 graduates** | | |
| Total | 39.6 | 7.3 | 33.2 | 13.3 | 12.9 |
| Sex | | | | | |
| Male | 64.7 | 14.1 | 53.7 | 25.3 | 15.2 |
| Female | 16.3 | 0.9 | 14.1 | 2.2 | 10.8 |
| Race/ethnicity | | | | | |
| White | 38.6 | 7.1 | 32.5 | 13.3 | 14.1 |
| Black | 36.0 | 7.7 | 28.2 | 8.6 | 11.0 |
| Hispanic | 44.8 | 8.5 | 37.9 | 15.3 | 8.3 |
| Asian | 45.0 | 3.8 | 37.2 | 13.9 | 15.2 |
| Native American | 58.9 | 7.8 | 52.6 | 32.8 | 6.0 |
| | | | **1987 graduates** | | |
| Total | 37.5 | 5.0 | 32.4 | 10.9 | 24.7 |
| Sex | | | | | |
| Male | 61.3 | 9.9 | 52.3 | 20.6 | 28.2 |
| Female | 15.2 | 0.5 | 13.8 | 1.8 | 21.4 |
| Race/ethnicity | | | | | |
| White | 37.3 | 4.8 | 32.8 | 10.6 | 26.8 |
| Black | 33.7 | 5.6 | 26.6 | 8.3 | 16.9 |
| Hispanic | 44.6 | 5.7 | 38.7 | 14.1 | 14.5 |
| Asian | 30.7 | 0.8 | 24.8 | 9.2 | 29.8 |
| Native American | 50.9 | 11.8 | 44.7 | 10.8 | 20.2 |

SOURCE: National Center for Education Statistics, High School and Beyond, Sophomore Cohort; 1987 High School Transcript Study.

**Figure 4.--Percentage of high school graduates participating in specific labor market preparation courses, by program area: 1982 and 1987**




SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

In 1987, high school graduates earned an average of one Carnegie unit in business and one unit in trade and industry programs, including 0.6 units in precision production programs (table 7). They earned an average of about 0.2 units in agriculture and about the same number of units in marketing and distribution, occupational home economics, and technical and communication programs. Students averaged less than 0.1 units in health. Boys earned more units than girls did in agriculture, trade and industry, and technical and communications programs, while girls earned more units in business, marketing and distribution, health, and occupational home economics. White students earned more units than blacks in agriculture, trade and industry, and technical and communication programs, while black students accumulated more units in health and occupational home economics.

**Table 7.--Average number of Carnegie units accumulated in specific labor market preparation, by program area: 1982 and 1987**

| | Agriculture | Business | Marketing and distribution | Health* | Occupational home economics |
|---|---|---|---|---|---|
| | | | **1982 graduates** | | |
| Total | 0.21 | 1.03 | 0.16 | 0.05 | 0.17 |
| Sex | | | | | |
| Male | 0.35 | 0.48 | 0.14 | 0.02 | 0.05 |
| Female | 0.08 | 1.54 | 0.18 | 0.08 | 0.29 |
| Race/ethnicity | | | | | |
| White | 0.23 | 1.06 | 0.15 | 0.04 | 0.17 |
| Black | 0.10 | 0.98 | 0.22 | 0.13 | 0.22 |
| Hispanic | 0.23 | 0.99 | 0.15 | 0.06 | 0.20 |
| Asian | 0.06 | 0.57 | 0.04 | 0.03 | 0.05 |
| Native American | 0.26 | 0.73 | 0.13 | 0.07 | 0.10 |
| | | | **1987 graduates** | | |
| Total | 0.19 | 0.97 | 0.16 | 0.07 | 0.19 |
| Sex | | | | | |
| Male | 0.32 | 0.57 | 0.13 | 0.02 | 0.08 |
| Female | 0.07 | 1.35 | 0.19 | 0.12 | 0.29 |
| Race/ethnicity | | | | | |
| White | 0.24 | 0.98 | 0.15 | 0.07 | 0.18 |
| Black | 0.09 | 0.99 | 0.17 | 0.12 | 0.26 |
| Hispanic | 0.06 | 0.98 | 0.16 | 0.08 | 0.17 |
| Asian | 0.01 | 0.65 | 0.16 | 0.11 | 0.08 |
| Native American | 0.19 | 1.09 | 0.08 | 0.09 | 0.09 |

*"Health" includes only vocational courses preparing students for work in health fields. General health or personal health courses are classified as "personal/other."

SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

**Table 7.--Average number of Carnegie units accumulated in specific labor market preparation, by program area: 1982 and 1987--Continued**

| | All programs | Trade and industry | | | Technical and communications |
|---|---|---|---|---|---|
| | | Construction | Precision production | Other | |
| **1982 graduates** | | | | | |
| Total | 1.06 | 0.13 | 0.66 | 0.26 | 0.11 |
| Sex | | | | | |
| Male | 1.98 | 0.26 | 1.19 | 0.53 | 0.14 |
| Female | 0.20 | 0.01 | 0.17 | 0.02 | 0.09 |
| Race/ethnicity | | | | | |
| White | 1.00 | 0.11 | 0.64 | 0.25 | 0.12 |
| Black | 0.97 | 0.21 | 0.57 | 0.20 | 0.11 |
| Hispanic | 1.37 | 0.17 | 0.84 | 0.36 | 0.07 |
| Asian | 0.87 | 0.04 | 0.63 | 0.20 | 0.16 |
| Native American | 1.84 | 0.20 | 1.19 | 0.46 | 0.05 |
| **1987 graduates** | | | | | |
| Total | 0.96 | 0.11 | .0.63 | 0.22 | 0.24 |
| Sex | | | | | |
| Male | 1.74 | 0.21 | 1.09 | 0.43 | 0.29 |
| Female | 0.23 | 0.01 | 0.20 | 0.02 | 0.18 |
| Race/ethnicity | | | | | |
| White | 1.01 | 0.11 | 0.67 | 0.23 | 0.26 |
| Black | 0.75 | 0.12 | 0.45 | 0.18 | 0.16 |
| Hispanic | 0.97 | 0.09 | 0.63 | 0.25 | 0.13 |
| Asian | 0.44 | 0.01 | 0.34 | 0.09 | 0.31 |
| Native American | 1.30 | 0.23 | 0.81 | 0.27 | 0.21 |

SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

As noted earlier, students varied greatly in the amount of vocational education they took during high school. Consequently, it is useful to examine how the academic course-taking patterns of students changed among students who took increasingly more vocational education. Table 8 shows how in 1987 students' academic course-taking patterns varied with the amount of vocational education taken. The table consists of two columns for each academic subject area. The first column indicates the number of Carnegie units earned in a particular academic subject area by the amount of vocational education taken. The second column, for students who earned some vocational education Carnegie units, expresses academic Carnegie units earned as a percentage of the academic units earned by students

who earned no vocational units. For example, table 8 shows that students with no vocational education units earned an average of 4.3 Carnegie units in English. Students who earned from 0.01 to 1.9 units of vocational education received an average of 4.2 units in English, or 97.9 percent of the units earned by students with no vocational education units. Students who earned eight or more units of vocational education earned 3.8 units of English, or 88.3 percent of the English units earned by students with no vocational education units.

**Table 8.--Number of Carnegie units earned in academic subjects, by number of units earned in vocational education: 1982 and 1987**

| Total vocational units | English | | Advanced or honors English | | Math | | Calculus & advanced math | |
|---|---|---|---|---|---|---|---|---|
| | units | percent* | units | percent* | units | percent* | units | percent* |
| **1982 graduates** | | | | | | | | |
| Zero | 4.05 | | 0.67 | | 3.47 | | 1.32 | |
| 0.01-1.99 | 4.13 | 102.0 | 0.42 | 62.7 | 3.34 | 96.2 | 1.15 | 87.1 |
| 2.0-3.99 | 3.97 | 98.0 | 0.26 | 38.2 | 2.89 | 83.3 | 0.77 | 58.3 |
| 4.0-5.99 | 3.83 | 94.6 | 0.15 | 22.4 | 2.40 | 69.2 | 0.42 | 31.8 |
| 6.0-7.99 | 3.72 | 91.8 | 0.09 | 13.4 | 2.04 | 59.0 | 0.23 | 17.4 |
| 8.0 or more | 3.55 | 87.6 | 0.08 | 12.0 | 1.75 | 50.4 | 0.13 | 9.8 |
| **1987 graduates** | | | | | | | | |
| Zero | 4.26 | | 1.48 | | 3.71 | | 1.53 | |
| 0.01-1.99 | 4.17 | 97.9 | 0.90 | 60.8 | 3.61 | 97.3 | 1.28 | 83.7 |
| 2.0-3.99 | 4.09 | 96.0 | 0.52 | 35.1 | 3.36 | 90.6 | 0.99 | 64.7 |
| 4.0-5.99 | 3.99 | 93.7 | 0.25 | 17.0 | 2.97 | 80.0 | 0.60 | 39.2 |
| 6.0-7.99 | 3.91 | 91.8 | 0.13 | 8.8 | 2.53 | 68.2 | 0.32 | 20.9 |
| 8.0 or more | 3.76 | 88.3 | 0.10 | 6.8 | 2.23 | 60.1 | 0.16 | 10.5 |

*These columns contain the ratio of the number of academic units accumulated in a specific subject by students with varying amounts of vocational education units to the number of academic units accumulated in that subject by students with no vocational units. Although referred to as "percentages," technically they are ratios in that the numerator is not a subset of the denominator.

SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

**Table 8.--Number of Carnegie units earned in academic subjects, by number of units earned in vocational education: 1982 and 1987--Continued**

| Total vocational units | Science | | Chemistry or physics | | Social studies | | Fine arts | | Foreign language | |
|---|---|---|---|---|---|---|---|---|---|---|
| | units | percent* | units | percent* | units | percent* | units | percent* | units | percent* |
| **1982 graduates** | | | | | | | | | | |
| Zero | 3.25 | | 1.37 | | 3.25 | | 2.55 | | 2.48 | |
| 0.01-1.99 | 2.99 | 92.0 | 1.11 | 81.0 | 3.33 | 102.5 | 2.05 | 80.4 | 2.03 | 81.8 |
| 2.0-3.99 | 2.47 | 76.0 | 0.68 | 49.6 | 3.30 | 101.5 | 1.77 | 69.4 | 1.31 | 52.8 |
| 4.0-5.99 | 1.97 | 60.6 | 0.34 | 24.8 | 3.20 | 98.5 | 1.35 | 52.9 | 0.69 | 27.8 |
| 6.0-7.99 | 1.68 | 51.7 | 0.17 | 12.4 | 3.02 | 92.9 | 1.08 | 42.4 | 0.36 | 14.5 |
| 8.0 or more | 1.46 | 44.9 | 0.10 | 7.3 | 2.79 | 85.8 | 0.73 | 28.6 | 0.23 | 9.3 |
| **1987 graduates** | | | | | | | | | | |
| Zero | 3.25 | | 1.42 | | 3.92 | | 2.82 | | 2.83 | |
| 0.01-1.99 | 3.20 | 98.4 | 1.27 | 89.4 | 3.61 | 92.1 | 2.19 | 77.7 | 2.50 | 88.3 |
| 2.0-3.99 | 2.86 | 88.0 | 0.95 | 66.9 | 3.46 | 88.3 | 1.62 | 57.4 | 1.81 | 64.0 |
| 4.0-5.99 | 2.36 | 72.6 | 0.51 | 35.9 | 3.27 | 83.4 | 1.27 | 45.0 | 1.07 | 37.8 |
| 6.0-7.99 | 2.01 | 61.8 | 0.24 | 16.9 | 3.11 | 79.3 | 1.04 | 36.9 | 0.61 | 21.6 |
| 8.0 or more | 1.76 | 54.2 | 0.11 | 7.8 | 2.90 | 74.0 | 0.66 | 23.4 | 0.34 | 12.0 |

* These columns contain the ratio of the number of academic units accumulated in a specific subject by students with varying amounts of vocational education units to the number of academic units accumulated in that subject by students with no vocational units. Although referred to as "percentages," technically they are ratios in that the numerator is not a subset of the denominator.

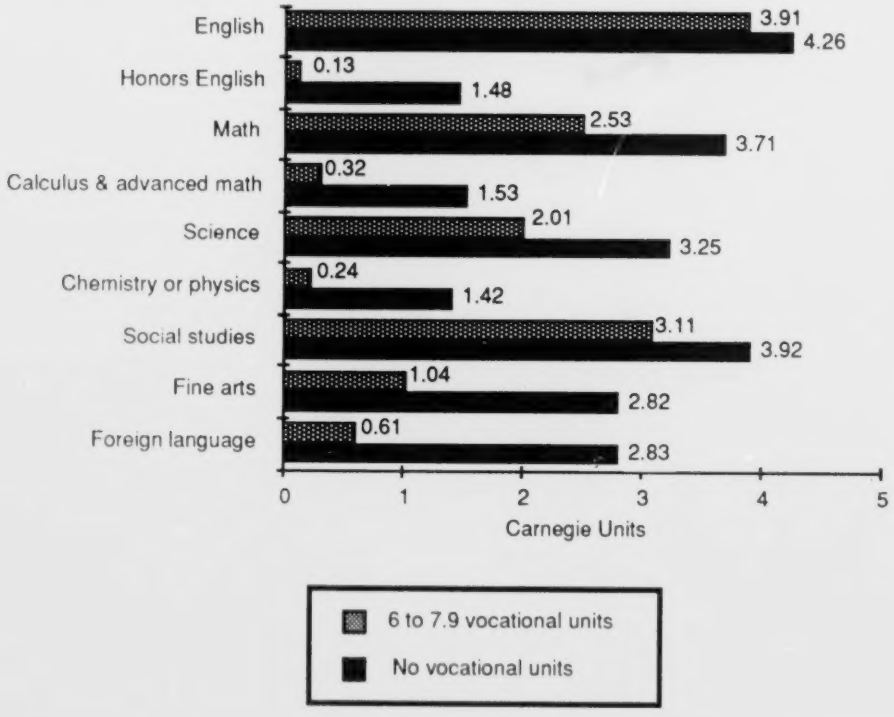
SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

Table 8, then, shows how academic course-taking changed as the amount of vocational education taken by students increased. For example, compared with students who took no vocational education, students who took between 0.01 and 1.99 units of vocational education took about the same amount of English (97.9 percent), mathematics (97.3 percent), science (98.4 percent), and social studies (92.1 percent). However, they took considerably less advanced or honors English (60.8 percent), calculus and advanced mathematics (83.7 percent), and fine arts (77.7 percent). In short, students who took less than two units of vocational education tended to take fewer units of advanced or specialized subjects. For students who took between 2.0 and 3.99 units of vocational education, the same pattern persisted, although to a greater degree. Thus, these students earned only 35.1 percent of the credits earned in advanced or honors English by students who took no vocational education, 64.7 percent of the calculus and advanced math credits, 66.9 percent of the chemistry or physics credits, 57.4 percent of the fine arts credits, and 64.0 percent of the foreign language credits.

Students who earned between 4.0 and 5.99 units continued to earn fewer units in advanced subjects, but at this level of vocational course-taking, students also began to take significantly fewer of the more basic academic courses. Thus, these students earned only 80.0 percent of the units in mathematics, 72.6 percent of the science units, and 83.4 percent of the social studies units.

Unless the vocational courses taken by the heaviest concentrators in vocational education contained substantial mathematical and scientific content, these students were exposed to significantly less math and science than were students who took no vocational education or even those who took as many as 3.99 units in vocational education. Figure 5 shows that students who earned between 6 and 7.99 units of vocational education took considerably less English (91.8 percent) mathematics (68.2 percent), science (61.8 percent), and social studies (79.3 percent). Compared with students who took no vocational education, these students earned practically no units in advanced English, math, or science and took considerably less foreign language and fine arts.

**Figure 5.--Average academic units earned by degree of concentration in vocational education: 1987**




SOURCE: National Center for Education Statistics, 1987 High School Transcript Study.

Generally, these same patterns existed in 1982 (table 8). However, in 1982, heavy concentrators in vocational education took even less math and science than they did in 1987. In 1982, students who took more than eight units of vocational education took only 50 percent of the math units and 45 percent of the science units taken by students who did not participate at all in vocational education.

## Conclusion

The transcripts of high school seniors in 1982 and 1987 reveal that virtually all students used the vocational education curriculum in one way or another during their high school careers. On the average, high school seniors took about 4.5 Carnegie units of vocational education. Students varied greatly, however, in the amount of vocational education units they accumulated. About 18 percent of the graduates earned fewer than two units of vocational education, while 30 percent took six units or more. In the aggregate, boys and girls earned about the same number of units in vocational education. Although girls earned more units in business, health, and home economics, boys earned more units in industrial arts, agriculture, trade and industry, and technical and communications programs. Asian students accumulated significantly fewer Carnegie units of vocational education than other students.

As students increased the amount of vocational education they took, they tended to take fewer courses in advanced English, math, and science, as well as fewer fine arts and foreign language courses. Heavy concentrators in vocational education, accumulating six or more units of vocational education, completed significantly fewer total units in basic math and science, as well as fewer total units in English and social studies.

Between 1982 and 1987, the average number of academic units earned by high school graduates increased by about 1.5 Carnegie units nationwide. This increase, however, did not result in a similar decrease in the average number of vocational units earned. Rather, the total number of all units earned climbed, and the decline in vocational education units was modest—less than 0.2—units and was concentrated in consumer and homemaking and industrial arts courses.

These trends, it should be emphasized, are national. In some states, it is possible that the declines in vocational education course-taking were more precipitous than the declines in total secondary enrollment. If so, however, these declines in some states were offset by gains in others. It should also be stressed that the data presented here only reflect participation through 1987. Patterns may have changed since then. NCES is collecting high school transcripts for the 1989-90 school year, and the data will permit some valuable comparisons with earlier years.

# Appendix A
# Methodology and Technical Notes

This appendix describes data sources and the methods used to prepare the data for analysis. It explains the procedures used to make the data for the two time periods as comparable as possible. It discusses issues affecting the accuracy of the estimates and describes the statistical procedures for assessing significance.

## Data Sources

All of the estimates presented in this report were prepared using the 1987 High School Transcript Study and the high school transcripts of the sophomore cohort of the High School and Beyond Study. The sophomore cohort graduated from high school in 1982.

For the 1987 High School Transcript Study (HSTS), NCES collected information on students who were eleventh graders in 1986. The HSTS transcript file is organized by student ID number. For each course taken by the student, the file contains the school year and term the course was taken, the number of credits earned, and the final grade received. Courses are coded using a six-digit course identification number that is based on the Classification of Instructional Programs. All tables were prepared using the transcript weight FINSTUWT. The HSTS final sample size was 24,430 students. For more information on HSTS, readers should consult the Judy Thorne *et al.*, *1987 High School Transcript Study Data File User's Manual* (Washington, D.C.: National Center for Education Statistics, February 1989).

The estimates for 1982 are based on a subsample of 1980 sophomores whose high school transcripts were collected as part of the High School and Beyond Study (HS&B). This subsample was limited to high school graduates whose graduation status was determined using the student exit status variable (EXSTAT). Once a student's graduation status was determined, the sample was further restricted to those from public schools (STYPE). The final HS&B sample included 9,409 students.

Both samples of transcripts include all academic and vocational education courses taken by students. In HS&B, however, it is not possible to distinguish courses taken at area vocational schools from other vocational courses. The HSTS transcripts do identify courses taken at area vocational schools, and separate analyses of these courses could be undertaken. As this study was concerned with making comparisons between all types of courses taken, no attempt was made to analyze separately course-taking in area schools.

## Making the Data from the Two Surveys Comparable

The first step in preparing the data for this analysis was to create comparable samples of high school graduates for 1982 and 1987. Unfortunately, the sample of high school students used by HS&B for the 1980 sophomore cohort is not strictly comparable to that used in the 1987 High School Transcript study, due largely to the different treatment of handicapped students.

While the inclusion of handicapped students in the HS&B student sample was not an explicit goal, students with handicaps were also not explicitly excluded. Handicapped students were included in the HS&B sample if, in the minds of their teachers and principals, they could complete the lengthy student questionnaires. Some fraction of the handicapped students who met this criterion and were included in the HS&B sample can be

identified using variables in the student questionnaires and in the Transcript File.[12] However, according to Harnisch, Lichtenstein, and Langford, 94 percent of the students who can be positively identified as handicapped in HS&B were physically handicapped; the national rate of physical disabilities among school age children with special needs is 4 percent.[13] Only 6 percent of the students identified as handicapped in the HS&B sample were learning disabled, and none were emotionally disabled or retarded. The vast majority of all handicapped students is generally comprised of these three disability groups, so the sample of handicapped students in HS&B, unlike the NAEP sample, is in no way representative of the national population of handicapped students.

In contrast, the NAEP transcript sample purposely over-sampled *all* handicapped students, who were identified based on Individualized Education Plans (IEPs). Thus, the data collection effort not only identified whether or not students were handicapped, it also identified the type (i.e., emotional, learning, physical, etc.) and severity (i.e., mild, moderate, severe, etc.) of the handicap. Furthermore, to ensure the participation of handicapped students, the demands placed on students by the NAEP questionnaires were considerably less than in HS&B.

To make the two data sets as consistent as possible, the samples of students in both the HS&B and NAEP data sets were limited to those students who were (1) identified as high school graduates and (2) completed between 16 and 32 total Carnegie Units. The first restriction focused the analysis only on the participation of high school graduates in the secondary curriculum, and the second restriction excluded students who were identified as graduates but whose transcripts were incomplete or out of scope.[14]

These sample restriction rules also had the advantage of eliminating most of the moderately and severely handicapped graduates from the NAEP sample. When we examined the disabilities of the handicapped students remaining in the NAEP sample after the imposition of these rules, we found most of them to be only mildly learning disabled, mildly emotionally disabled, or mildly retarded. Given the rigor of the HS&B questionnaire, these are the kinds of disabled students who would most likely have been selected to participate yet not identified as handicapped. Altogether, the handicapped students remaining in the NAEP sample after the imposition of the sample restrictions accounted for about 3 percent of the total population of graduates. This approach to making the samples consistent proved to be a simple solution to the problems posed by the inclusion of handicapped students in HS&B without their having been identified as such.

A second step in ensuring comparability across the two data sets involved the classification of courses—i.e., consistently defining what courses are vocational and non-vocational. To achieve consistent classification, we used the Secondary School Taxonomy (SST) developed for NAVE. Copies of the Secondary School Taxonomy may be obtained

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[12]Unfortunately, these variables do not agree with each other. Up to 34 percent of the students sampled claimed that they were handicapped at some time, but only 2.6 percent of the students are identified in the transcript file as being in a special education program.

[13] Delwyn L. Harnisch, Stephen J. Lichtenstein, and James B. Langford, *Digest on Youth in Transition*, (Champaign, Illinois: Transition Institute at Illinois, 1986).

[14]A small number of transcripts, less than 1 percent, reported very large numbers of units—more than a student could possibly accumulate during four years of high school. Apparently, these schools were not reporting Carnegie units but rather some other unit of measurement. Schools were assumed to be using some other metric than Carnegie units when total units on the transcript exceeded 32. These transcripts were then considered to be out of scope and were excluded from the analysis.

from the Data Development Division, National Center for Education Statistics, 555 New Jersey Avenue NW, Washington, DC 20208.

## Accuracy of Estimates

The statistics in this report are estimates derived from samples. Two broad categories of error occur in such estimates: sampling and nonsampling error. Sampling errors happen because observations are made only on samples of students, not on entire populations. Nonsampling errors occur not only in surveys of sample groups but also in complete censuses of entire populations.

Nonsampling errors can be caused by a number of factors: inability to obtain complete information about all students in all schools in the sample (some students or schools refused to participate, or students participated but answered only certain items); ambiguous definitions; differences in interpreting questions; inability or unwillingness to give correct information; mistakes in recording or coding data; and other errors in collecting, processing, sampling, and estimating missing data.

The accuracy of a survey result is determined by the effect of sampling and nonsampling errors. In surveys with sample sizes as large as those found in the HSTS and HS&B studies, the sampling errors generally are not the primary concern, except where separate estimates are made for relatively small subpopulations, such as Asian Americans or Native Americans. In this report, small sample sizes were not a problem.

Nonsampling errors are difficult to estimate. Nonresponse bias and the reliability and validity of the data are the major sources of nonsampling error. The response rate for the 1987 High School Transcript Study was 97.0 percent. Response rates for HS&B surveys were all above 85 percent, and the item response rates within the HS&B instruments for the items used in this report were all above 95 percent. The weights used to calculate the estimates were constructed so that they compensated for instrument nonresponse.

## Statistical Procedures

The descriptive comparisons in this report were based on **Student's t** statistics. Comparisons based on the tables include the estimates of the probability of a Type I error, or significance level. The significance levels were determined by calculating **Student's t** values for the differences between each pair of means or proportions and comparing these to published tables of significance levels for two-tailed hypothesis testing.

HSTS and HS&B samples, while representative, are not simple random samples. Students were initially selected within high schools grouped within strata. Sampling rates for schools within different strata varied, resulting in better data for policy purposes, but at a cost to statistical efficiency. Hence, simple random techniques for the estimation of standard errors frequently underestimate the true standard errors for some estimates. To overcome this problem, standard errors for all estimates in this tabulation were calculated using Taylor residual techniques. All estimates, standard errors, unweighted Ns and weighted Ns are available from NCES in comma separated form for use with all major spreadsheet software and microcomputers. In addition, a hardcopy of the taxonomy used to categorize courses is also available, as well as hardcopy of the standard errors, unweighted Ns, and weighted Ns for tables in Appendix C. Those interested in this information should

contact the Data Development Division, National Center for Education Statistics, 555 New Jersey Avenue NW, Washington, DC 20208.

Standard errors and unweighted Ns for tables in the main text are included in Appendix B. **Student's t** values may be computed for comparisons using the estimates with the following formula:

$$t = \frac{P_1 - P_2}{\sqrt{se_1^2 + se_2^2}}$$

where $P_1$ and $P_2$ are the estimates to be compared and $se_1$ and $se_2$ are their corresponding standard errors.

There are hazards in reporting statistical tests for each comparison. First, comparisons with large **t** statistics may appear to merit special attention. This can be misleading, because the magnitude of the **t** statistic is related not only to the observed differences in means or percentages but also to the number of students in the specific categories used for comparison. Hence, a small difference compared across a large number of students would produce a large **t** statistic.

There is a second hazard in reporting statistical tests for each comparison. When making multiple comparisons among categories of an independent variable (for example, different levels of income), the probability of a Type I error for these comparisons taken as a group is larger than the probability for a single comparison. When more than one difference between groups of related characteristics or "families" are tested for statistical significance, we must apply a standard that assures a level of significance for all of those comparisons taken together.

To reduce the probability of Type I error in a set of multiple comparisons, the Bonferroni procedure was used for families of **Student's t** tests. Families of tests were defined as pairwise tests comparing an outcome for two or more related categories of students. For example, a comparison of the average number of Carnegie units earned in vocational education among Native American, Hispanic, Asian, black, and white postsecondary concentrators makes up a family of tests, with 10 comparisons possible: white vs. black, white vs. Asian, white vs. Hispanic, white vs. Native American, black vs. Asian, black vs. Hispanic, black vs. Native American, Asian vs. Hispanic, Asian vs. Native American, and Hispanic vs. Native American.

The critical value for a Bonferroni **t** test depends upon the number of comparisons within a family. When only one pairwise comparison is possible, the Bonferroni critical value is the same as the ordinary value obtained from a **Student's t** test. The more comparisons that are possible, the larger the Bonferroni critical value and the greater the **t** statistic needed for each difference to guarantee a significance level of $\leq .05$ for all of the possible comparisons taken together.[15]

Comparisons were made in this report only when $p \leq .05/k$ was present for a particular pairwise comparison, where that comparison was one of $k$ tests within a family. This guarantees both that the individual comparison would have $p \leq .05$ and that when $k$

[15]For a discussion of familywise error rates, see Alan J. Klockars and Gilbert Sax, *Multiple Comparisons* (Beverly Hills, CA: Sage Publications), 1986, 17.

comparisons were made within a family of possible tests, the significance level of the comparisons would sum to $p \leq .05$.[16]

For example, in a comparison of the Carnegie units earned among different racial and ethnic groups, ten comparisons are possible. In this family, $k = 10$, and the significance level of each test must be $p \leq .05/10$ or .005.

[16]The standard is that $p \leq .05/k$ for each comparison is more stringent than the criterion that the significance level of the comparisons should sum to $p \leq .05$. For tables showing the **t** statistic required to insure that $p \leq .05/k$ for a particular family size and degrees of freedom, see Oliver Jean Dunn, "Multiple Comparisons Among Means," *Journal of the American Statistical Association* 56: 52-64.

# Appendix B
## Standard Errors and Unweighted Ns

**Table 1.--Percentage of high school graduates enrolled in vocational education: 1982 and 1987**

| | Unweighted N | Standard errors | | | |
|---|---|---|---|---|---|
| | | All vocational education | Consumer and homemaking | General labor market prep. | Specific labor market prep. |
| | | | **1982 graduates** | | |
| Total | 9,409 | 0.210 | 0.923 | 0.708 | 0.525 |
| Sex | | | | | |
| Male | 4,564 | 0.287 | 1.163 | 1.021 | 0.624 |
| Female | 4,845 | 0.278 | 1.064 | 0.760 | 0.738 |
| Race/ethnicity | | | | | |
| White | 5,547 | 0.277 | 1.062 | 0.773 | 0.620 |
| Black | 1,311 | 0.200 | 2.289 | 2.016 | 1.320 |
| Hispanic | 2,019 | 0.250 | 1.819 | 1.512 | 1.057 |
| Asian | 294 | 1.256 | 4.860 | 3.331 | 3.408 |
| Native American | 159 | 0.621 | 7.858 | 3.578 | 2.158 |
| | | | **1987 graduates** | | |
| Total | 24,400 | 0.351 | 1.208 | 1.012 | 0.060 |
| Sex | | | | | |
| Male | 12,237 | 0.280 | 1.427 | 1.046 | 0.599 |
| Female | 12,094 | 0.468 | 1.442 | 1.186 | 0.764 |
| Race/ethnicity | | | | | |
| White | 15,622 | 0.329 | 1.431 | 1.183 | 0.713 |
| Black | 3,583 | 0.246 | 2.090 | 1.591 | 1.237 |
| Hispanic | 2,779 | 0.798 | 3.505 | 2.373 | 1.066 |
| Asian | 833 | 3.124 | 6.545 | 8.216 | 3.055 |
| Native American | 302 | 0.843 | 4.019 | 2.831 | 2.730 |

SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

**Table 2.--Average number of Carnegie units earned by high school graduates: 1982 and 1987**

| | Unweighted N | Standard errors | | | |
|---|---|---|---|---|---|
| | | Total | Academic | Vocational | Personal/other |
| | | **1982 graduates** | | | |
| Total | 9,409 | 0.063 | 0.070 | 0.056 | 0.035 |
| Sex | | | | | |
| Male | 4,564 | 0.071 | 0.080 | 0.069 | 0.043 |
| Female | 4,845 | 0.071 | 0.084 | 0.067 | 0.036 |
| Race/ethnicity | | | | | |
| White | 5,547 | 0.070 | 0.081 | 0.064 | 0.040 |
| Black | 1,311 | 0.157 | 0.193 | 0.144 | 0.082 |
| Hispanic | 2,019 | 0.109 | 0.109 | 0.104 | 0.067 |
| Asian | 294 | 0.172 | 0.253 | 0.184 | 0.119 |
| Native American | 159 | 0.290 | 0.256 | 0.267 | 0.125 |
| | | **1987 graduates** | | | |
| Total | 24,430 | 0.086 | 0.105 | 0.070 | 0.066 |
| Sex | | | | | |
| Male | 12,254 | 0.091 | 0.117 | 0.079 | 0.069 |
| Female | 12,106 | 0.091 | 0.112 | 0.078 | 0.068 |
| Race/ethnicity | | | | | |
| White | 15,630 | 0.098 | 0.126 | 0.088 | 0.075 |
| Black | 3,585 | 0.149 | 0.154 | 0.096 | 0.105 |
| Hispanic | 2,783 | 0.143 | 0.195 | 0.155 | 0.104 |
| Asian | 844 | 0.628 | 0.621 | 0.262 | 0.294 |
| Native American | 302 | 0.544 | 0.344 | 0.181 | 0.183 |

SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

**Table 3.--Percentage of high school graduates earning varying number of Carnegie units in vocational education: 1982 and 1987**

| | Unwtd. N | Standard errors | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 units | .01-.9 units | 1-1.9 units | 2-2.9 units | 3-3.9 units | 4-4.9 units | 5-5.9 units | 6-6.9 units | 7-7.9 units | 8+ units |
| **1982 graduates** | | | | | | | | | | | |
| Total | 9,409 | 0.210 | 0.287 | 0.507 | 0.479 | 0.441 | 0.505 | 0.474 | 0.436 | 0.379 | 0.627 |
| Sex | | | | | | | | | | | |
| Male | 4,564 | 0.287 | 0.387 | 0.627 | 0.636 | 0.627 | 0.751 | 0.652 | 0.583 | 0.579 | 0.815 |
| Female | 4,845 | 0.278 | 0.373 | 0.676 | 0.670 | 0.663 | 0.648 | 0.661 | 0.571 | 0.462 | 0.778 |
| Race/ethnicity | | | | | | | | | | | |
| White | 5,547 | 0.277 | 0.376 | 0.600 | 0.587 | 0.553 | 0.611 | 0.555 | 0.502 | 0.452 | 0.695 |
| Black | 1,311 | 0.200 | 0.328 | 1.443 | 1.223 | 1.206 | 1.361 | 1.380 | 1.270 | 0.941 | 1.898 |
| Hispanic | 2,019 | 0.250 | 0.337 | 0.788 | 1.057 | 0.877 | 1.162 | 1.015 | 1.098 | 1.152 | 1.509 |
| Asian | 294 | 1.256 | 1.694 | 2.788 | 3.156 | 2.070 | 2.282 | 3.229 | 1.715 | 1.215 | 1.699 |
| Native American | 159 | 0.621 | 1.171 | 2.188 | 3.284 | 2.725 | 2.962 | 6.635 | 9.811 | 3.202 | 3.108 |
| **1987 graduates** | | | | | | | | | | | |
| Total | 24,430 | 0.351 | 0.422 | 0.486 | 0.459 | 0.422 | 0.426 | 0.404 | 0.324 | 0.397 | 0.599 |
| Sex | | | | | | | | | | | |
| Male | 12,254 | 0.280 | 0.382 | 0.592 | 0.605 | 0.446 | 0.410 | 0.552 | 0.392 | 0.496 | 0.722 |
| Female | 12,106 | 0.468 | 0.520 | 0.588 | 0.538 | 0.555 | 0.679 | 0.481 | 0.465 | 0.480 | 0.713 |
| Race/ethnicity | | | | | | | | | | | |
| White | 15,630 | 0.329 | 0.505 | 0.634 | 0.532 | 0.459 | 0.523 | 0.463 | 0.428 | 0.503 | 0.809 |
| Black | 3,585 | 0.246 | 0.866 | 1.189 | 1.048 | 0.826 | 0.986 | 0.855 | 0.732 | 1.041 | 0.920 |
| Hispanic | 2,783 | 0.798 | 0.436 | 1.164 | 1.264 | 1.343 | 1.178 | 0.935 | 1.019 | 1.240 | 1.316 |
| Asian | 844 | 3.124 | 1.215 | 2.657 | 2.333 | 3.334 | 1.887 | 1.331 | 1.291 | 0.756 | 1.001 |
| Native American | 302 | 0.843 | 0.751 | 1.356 | 2.143 | 3.058 | 2.463 | 2.386 | 1.476 | 1.633 | 2.167 |

SOURCE: National Center for Education Statistics, High School and Beyond, Sophomore Cohort; 1987 High School Transcript Study.

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**Table 4.--Average number of Carnegie units earned in different types of vocational education: 1982 and 1987**

| | | Standard errors | | | | |
|---|---|---|---|---|---|---|
| | | | General labor market preparation | | | Specific labor market preparation |
| | Unwtd. N | Consumer and homemaking | Industrial arts | Career education | Total* | |
| | | | **1982 graduates** | | | |
| Total | 9,409 | 0.016 | 0.010 | 0.011 | 0.018 | 0.049 |
| Sex | | | | | | |
| Male | 4,564 | 0.013 | 0.019 | 0.015 | 0.025 | 0.068 |
| Female | 4,845 | 0.025 | 0.005 | 0.012 | 0.021 | 0.052 |
| Race/ethnicity | | | | | | |
| White | 5,547 | 0.019 | 0.012 | 0.011 | 0.020 | 0.055 |
| Black | 1,311 | 0.047 | 0.018 | 0.034 | 0.046 | 0.145 |
| Hispanic | 2,019 | 0.043 | 0.025 | 0.035 | 0.047 | 0.098 |
| Asian | 294 | 0.032 | 0.036 | 0.045 | 0.073 | 0.147 |
| Native American | 159 | 0.073 | 0.060 | 0.048 | 0.087 | 0.239 |
| | | | **1987 graduates** | | | |
| Total | 24,430 | 0.019 | 0.010 | 0.012 | 0.023 | 0.055 |
| Sex | | | | | | |
| Male | 12,254 | 0.016 | 0.017 | 0.011 | 0.025 | 0.071 |
| Female | 12,106 | 0.029 | 0.005 | 0.015 | 0.026 | 0.054 |
| Race/ethnicity | | | | | | |
| White | 15,630 | 0.024 | 0.012 | 0.013 | 0.028 | 0.066 |
| Black | 3,585 | 0.033 | 0.013 | 0.026 | 0.032 | 0.091 |
| Hispanic | 2,783 | 0.063 | 0.021 | 0.038 | 0.057 | 0.094 |
| Asian | 844 | 0.068 | 0.010 | 0.025 | 0.094 | 0.128 |
| Native American | 302 | 0.058 | 0.070 | 0.023 | 0.099 | 0.164 |

*Includes basic skills courses such as beginning typing and business math, as well as career education and industrial arts.

SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

**Table 5.--Percentage of high school graduates earning varying numbers of Carnegie units in specific labor market preparation courses: 1982 and 1987**

| | Unwtd. N | Standard errors | | | | | |
|---|---|---|---|---|---|---|---|
| | | 0 units | .01-.9 units | 1-1.9 units | 2-2.9 units | 3-3.9 units | 4 or more units |
| **1982 graduates** | | | | | | | |
| Total | 9,409 | 0.525 | 0.412 | 0.540 | 0.544 | 0.476 | 0.806 |
| Sex | | | | | | | |
| Male | 4,564 | 0.624 | 0.522 | 0.718 | 0.758 | 0.684 | 1.157 |
| Female | 4,845 | 0.738 | 0.597 | 0.771 | 0.765 | 0.658 | 0.919 |
| Race/ethnicity | | | | | | | |
| White | 5,547 | 0.620 | 0.495 | 0.651 | 0.672 | 0.561 | 0.933 |
| Black | 1,311 | 1.320 | 0.992 | 1.512 | 1.412 | 1.276 | 2.269 |
| Hispanic | 2,019 | 1.057 | 0.779 | 1.138 | 1.200 | 1.169 | 1.710 |
| Asian | 294 | 3.408 | 1.936 | 2.332 | 2.552 | 3.332 | 3.118 |
| Native American | 159 | 2.158 | 1.521 | 3.764 | 2.721 | 3.748 | 7.904 |
| **1987 graduates** | | | | | | | |
| Total | 24,430 | 0.606 | 0.560 | 0.529 | 0.423 | 0.441 | 0.953 |
| Sex | | | | | | | |
| Male | 12,254 | 0.606 | 0.591 | 0.630 | 0.492 | 0.551 | 1.182 |
| Female | 12,106 | 0.766 | 0.657 | 0.687 | 0.552 | 0.614 | 1.033 |
| Race/ethnicity | | | | | | | |
| White | 15,630 | 0.710 | 0.660 | 0.714 | 0.515 | 0.535 | 1.152 |
| Black | 3,585 | 1.237 | 1.219 | 1.200 | 0.697 | 0.959 | 1.657 |
| Hispanic | 2,783 | 1.191 | 0.819 | 1.275 | 1.061 | 1.022 | 2.132 |
| Asian | 844 | 2.976 | 3.380 | 2.744 | 2.429 | 1.732 | 2.171 |
| Native American | 302 | 2.730 | 1.042 | 2.669 | 2.922 | 2.667 | 3.219 |

SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

**Table 6.--Percentage of high school graduates participating in specific labor market preparation courses, by program area: 1982 and 1987**

| | Unwtd. N | Standard errors | | | | |
|---|---|---|---|---|---|---|
| | | Agriculture | Business | Marketing and distribution | Health* | Occupational home economics |
| **1982 graduates** | | | | | | |
| Total | 9,409 | 0.583 | 0.828 | 0.481 | 0.480 | 0.568 |
| Sex | | | | | | |
| Male | 4,564 | 0.922 | 1.105 | 0.620 | 0.508 | 0.513 |
| Female | 4,845 | 0.539 | 1.029 | 0.613 | 0.563 | 0.874 |
| Race/ethnicity | | | | | | |
| White | 5,547 | 0.662 | 0.983 | 0.556 | 0.496 | 0.663 |
| Black | 1,311 | 1.199 | 2.326 | 1.406 | 1.437 | 1.508 |
| Hispanic | 2,019 | 1.157 | 1.840 | 0.821 | 0.961 | 1.220 |
| Asian | 294 | 1.279 | 3.587 | 1.423 | 2.159 | 1.279 |
| Native American | 159 | 4.824 | 7.016 | 2.484 | 2.266 | 2.257 |
| **1987 graduates** | | | | | | |
| Total | 24,430 | 0.581 | 1.048 | 0.662 | 0.597 | 0.561 |
| Sex | | | | | | |
| Male | 12,254 | 0.934 | 1.251 | 0.711 | 0.529 | 0.563 |
| Female | 12,106 | 0.389 | 1.137 | 0.795 | 0.738 | 0.801 |
| Race/ethnicity | | | | | | |
| White | 15,630 | 0.681 | 1.321 | 0.793 | 0.695 | 0.691 |
| Black | 3,585 | 1.108 | 1.876 | 1.205 | 0.789 | 1.152 |
| Hispanic | 2,783 | 0.791 | 2.096 | 1.294 | 2.203 | 1.333 |
| Asian | 844 | 0.190 | 5.076 | 3.596 | 3.307 | 1.466 |
| Native American | 302 | 3.580 | 8.708 | 1.531 | 2.648 | 2.763 |

*"Health" includes only vocational courses preparing students for work in health fields. General health or personal health courses are classified as "personal/other."

SOURCE: National Center for Education Statistics, High School and Beyond, Sophomore Cohort; 1987 High School Transcript Study.

**Table 6.--Percentage of high school graduates participating in specific labor market preparation courses, by program area: 1982 and 1987--Continued**

| | | Standard errors | | | | |
|---|---|---|---|---|---|---|
| | | | Trade and industry | | | Technical and communications |
| | Unwtd. N | All programs | Construction | Precision production | Other | |
| | | | **1982 graduates** | | | |
| Total | 9,409 | 0.798 | 0.412 | 0.819 | 0.574 | 0.671 |
| Sex | | | | | | |
| Male | 4,564 | 1.092 | 0.796 | 1.226 | 1.065 | 0.917 |
| Female | 4,845 | 0.841 | 0.186 | 0.815 | 0.312 | 0.709 |
| Race/ethnicity | | | | | | |
| White | 5,547 | 0.915 | 0.490 | 0.932 | 0.679 | 0.803 |
| Black | 1,311 | 2.202 | 1.063 | 2.108 | 1.014 | 1.444 |
| Hispanic | 2,019 | 1.744 | 0.980 | 1.769 | 1.325 | 0.892 |
| Asian | 294 | 3.989 | 1.206 | 4.063 | 3.592 | 2.667 |
| Native American | 159 | 6.709 | 2.675 | 7.380 | 9.316 | 2.025 |
| | | | **1987 graduates** | | | |
| Total | 24,430 | 0.807 | 0.417 | 0.819 | 0.531 | 1.211 |
| Sex | | | | | | |
| Male | 12,254 | 1.198 | 0.822 | 1.218 | 0.990 | 1.415 |
| Female | 12,106 | 0.763 | 0.088 | 0.750 | 0.218 | 1.217 |
| Race/ethnicity | | | | | | |
| White | 15,630 | 0.844 | 0.414 | 0.874 | 0.624 | 1.466 |
| Black | 3,585 | 2.034 | 0.859 | 1.982 | 1.043 | 1.993 |
| Hispanic | 2,783 | 1.868 | 0.807 | 1.972 | 1.471 | 1.492 |
| Asian | 844 | 4.602 | 0.352 | 3.898 | 2.399 | 5.681 |
| Native American | 302 | 3.310 | 3.647 | 3.439 | 2.303 | 6.147 |

SOURCE: National Center for Education Statistics, High School and Beyond, Sophomore Cohort; 1987 High School Transcript Study.

**Table 7.--Average number of Carnegie units accumulated in specific labor market preparation, by program area: 1982 and 1987**

| | Unwtd. N | Standard errors | | | | |
|---|---|---|---|---|---|---|
| | | Agriculture | Business | Marketing and distribution | Health* | Occupational home economics |
| **1982 graduates** | | | | | | |
| Total | 9,409 | 0.016 | 0.023 | 0.011 | 0.005 | 0.013 |
| Sex | | | | | | |
| Male | 4,564 | 0.029 | 0.018 | 0.013 | 0.004 | 0.008 |
| Female | 4,845 | 0.009 | 0.038 | 0.017 | 0.009 | 0.024 |
| Race/ethnicity | | | | | | |
| White | 5,547 | 0.018 | 0.029 | 0.014 | 0.005 | 0.016 |
| Black | 1,311 | 0.020 | 0.062 | 0.031 | 0.031 | 0.043 |
| Hispanic | 2,019 | 0.032 | 0.050 | 0.018 | 0.018 | 0.028 |
| Asian | 294 | 0.021 | 0.093 | 0.021 | 0.012 | 0.018 |
| Native American | 159 | 0.088 | 0.135 | 0.042 | 0.038 | 0.039 |
| **1987 graduates** | | | | | | |
| Total | 24,430 | 0.017 | 0.025 | 0.014 | 0.007 | 0.012 |
| Sex | | | | | | |
| Male | 12,254 | 0.027 | 0.021 | 0.013 | 0.000 | 0.010 |
| Female | 12,106 | 0.010 | 0.038 | 0.018 | 0.011 | 0.019 |
| Race/ethnicity | | | | | | |
| White | 15,630 | 0.020 | 0.034 | 0.018 | 0.007 | 0.013 |
| Black | 3,585 | 0.020 | 0.051 | 0.021 | 0.021 | 0.030 |
| Hispanic | 2,783 | 0.014 | 0.084 | 0.025 | 0.020 | 0.022 |
| Asian | 844 | 0.006 | 0.082 | 0.094 | 0.040 | 0.023 |
| Native American | 302 | 0.065 | 0.181 | 0.037 | 0.020 | 0.037 |

*"Health" includes only vocational courses preparing students for work in health fields. General health or personal health courses are classified as "personal/other."

SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

**Table 7.--Average number of Carnegie units accumulated in specific labor market preparation, by program area: 1982 and 1987--Continued**

| | Unwtd. N | Standard errors | | | | |
|---|---|---|---|---|---|---|
| | | Trade and industry | | | | Technical and communications |
| | | All programs | Construction | Precision production | Other | |
| | | | | **1982 graduates** | | |
| Total | 9,409 | 0.034 | 0.010 | 0.024 | 0.016 | 0.007 |
| Sex | | | | | | |
| Male | 4,564 | 0.063 | 0.020 | 0.042 | 0.032 | 0.011 |
| Female | 4,845 | 0.015 | 0.000 | 0.014 | 0.004 | 0.007 |
| Race/ethnicity | | | | | | |
| White | 5,547 | 0.037 | 0.010 | 0.025 | 0.019 | 0.008 |
| Black | 1,311 | 0.093 | 0.037 | 0.065 | 0.034 | 0.019 |
| Hispanic | 2,019 | 0.088 | 0.027 | 0.057 | 0.049 | 0.009 |
| Asian | 294 | 0.100 | 0.016 | 0.074 | 0.066 | 0.050 |
| Native American | 159 | 0.407 | 0.087 | 0.302 | 0.159 | 0.017 |
| | | | | **1987 graduates** | | |
| Total | 24,430 | 0.031 | 0.009 | 0.023 | 0.010 | 0.013 |
| Sex | | | | | | |
| Male | 12,254 | 0.056 | 0.019 | 0.040 | 0.021 | 0.018 |
| Female | 12,106 | 0.016 | 0.000 | 0.016 | 0.004 | 0.011 |
| Race/ethnicity | | | | | | |
| White | 15,630 | 0.034 | 0.010 | 0.028 | 0.012 | 0.017 |
| Black | 3,585 | 0.055 | 0.020 | 0.034 | 0.025 | 0.021 |
| Hispanic | 2,783 | 0.058 | 0.016 | 0.033 | 0.030 | 0.016 |
| Asian | 844 | 0.066 | 0.004 | 0.052 | 0.026 | 0.077 |
| Native American | 302 | 0.141 | 0.073 | 0.125 | 0.067 | 0.072 |

SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

**Table 8.--Number of Carnegie units earned in academic subjects, by number of units earned in vocational education: 1982 and 1987**

| Total vocational units | Unwtd. N | Standard errors: English | Adv. English | Math | Adv. math | Science | Chem. or Physics | Social studies | Fine arts | Foreign language |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | **1982 graduates** | | | | | |
| Zero | 225 | 0.087 | 0.110 | 0.072 | 0.071 | 0.121 | 0.085 | 0.074 | 0.186 | 0.119 |
| > 0.01-1.99 | 1,438 | 0.041 | 0.040 | 0.034 | 0.038 | 0.046 | 0.036 | 0.042 | 0.072 | 0.050 |
| 2.0-3.99 | 2,435 | 0.027 | 0.023 | 0.029 | 0.023 | 0.035 | 0.025 | 0.030 | 0.057 | 0.038 |
| 4.0-5.99 | 2,312 | 0.029 | 0.021 | 0.030 | 0.020 | 0.030 | 0.018 | 0.033 | 0.048 | 0.030 |
| 6.0-7.99 | 1,671 | 0.032 | 0.016 | 0.032 | 0.015 | 0.030 | 0.015 | 0.031 | 0.051 | 0.022 |
| 8 or more | 1,328 | 0.042 | 0.014 | 0.040 | 0.016 | 0.032 | 0.017 | 0.039 | 0.043 | 0.021 |
| | | | | | **1987 graduates** | | | | | |
| Zero | 504 | 0.085 | 0.233 | 0.069 | 0.079 | 0.089 | 0.088 | 0.257 | 0.207 | 0.103 |
| > 0.01-1.99 | 3,574 | 0.036 | 0.071 | 0.044 | 0.043 | 0.052 | 0.046 | 0.052 | 0.081 | 0.120 |
| 2.0-3.99 | 6,743 | 0.026 | 0.037 | 0.037 | 0.035 | 0.047 | 0.040 | 0.034 | 0.049 | 0.040 |
| 4.0-5.99 | 6,023 | 0.024 | 0.023 | 0.031 | 0.026 | 0.036 | 0.027 | 0.036 | 0.042 | 0.035 |
| 6.0-7.99 | 4,337 | 0.028 | 0.021 | 0.034 | 0.016 | 0.034 | 0.018 | 0.035 | 0.043 | 0.027 |
| 8 or more | 3,249 | 0.035 | 0.036 | 0.037 | 0.015 | 0.040 | 0.015 | 0.046 | 0.042 | 0.026 |

SOURCE: National Center for Education Statistics, 1987 High School Transcript Study; High School and Beyond, 1980 Sophomore Cohort.

# Appendix C

## Supplementary Tables

## High School and Beyond Cohort: 1982

Table 1.--Average number of Carnegie units completed by public high school graduates:1982

| | Total* | Academic | Vocational | Personal use/other |
|---|---|---|---|---|
| Total | 21.34 | 14.10 | 4.62 | 2.59 |
| Sex | | | | |
| Male | 21.21 | 13.85 | 4.61 | 2.72 |
| Female | 21.46 | 14.33 | 4.64 | 2.47 |
| Race/ethnicity | | | | |
| White | 21.41 | 14.35 | 4.52 | 2.53 |
| Black | 21.03 | 13.62 | 4.79 | 2.58 |
| Hispanic | 21.12 | 12.92 | 5.26 | 2.87 |
| Asian | 22.07 | 15.84 | 3.13 | 3.07 |
| Native American | 21.32 | 13.29 | 5.10 | 2.90 |
| Socioeconomic status | | | | |
| Lowest quartile | 20.97 | 12.88 | 5.56 | 2.51 |
| Second quartile | 21.21 | 13.53 | 5.11 | 2.55 |
| Third quartile | 21.44 | 14.34 | 4.44 | 2.63 |
| Highest quartile | 21.81 | 15.91 | 3.22 | 2.67 |
| Urbanicity | | | | |
| Urban | 21.03 | 14.27 | 4.23 | 2.51 |
| Suburban | 21.44 | 14.32 | 4.39 | 2.70 |
| Rural | 21.37 | 13.68 | 5.20 | 2.47 |
| High school grades | | | | |
| Mostly As | 22.41 | 16.71 | 3.16 | 2.54 |
| Mostly Bs | 21.82 | 14.62 | 4.49 | 2.69 |
| Mostly Cs | 20.74 | 12.86 | 5.30 | 2.56 |
| Mostly below C | 19.65 | 12.26 | 5.04 | 2.31 |
| Parent's education | | | | |
| Less than high school grad. | 20.94 | 12.77 | 5.60 | 2.55 |
| High school graduate | 21.17 | 13.12 | 5.49 | 2.54 |
| Some postsecondary | 21.41 | 14.22 | 4.55 | 2.61 |
| 4-year college degree | 21.72 | 15.75 | 3.34 | 2.61 |
| Family income | | | | |
| Less than $15,000 | 21.08 | 13.28 | 5.24 | 2.52 |
| $15,000-24,999 | 21.27 | 13.81 | 4.93 | 2.51 |
| $25,000-39,999 | 21.58 | 14.58 | 4.42 | 2.58 |
| $40,000 or more | 21.68 | 15.29 | 3.58 | 2.78 |
| Community type | | | | |
| Rural | 20.98 | 12.87 | 5.77 | 2.31 |
| Medium city | 21.51 | 14.35 | 4.56 | 2.58 |
| Suburb | 21.38 | 14.25 | 4.41 | 2.71 |
| Large city | 21.35 | 14.60 | 4.02 | 2.70 |

*Columns may not add to total due to rounding.

Table 1.--Average number of Carnegie units completed by public high school graduates: 1982--Continued

| | Total units | Academic units | Vocational units | Personal use/other units |
|---|---|---|---|---|
| Student's Feb. 83 job status | | | | |
| Full-time job | 21.26 | 13.17 | 5.44 | 2.63 |
| Part-time job | 21.48 | 14.61 | 4.30 | 2.56 |
| Unemployed | 20.64 | 12.34 | 5.74 | 2.48 |
| Not in labor force | 21.46 | 14.81 | 4.07 | 2.56 |
| Total vocational units | | | | |
| 0.0 units | 21.54 | 19.05 | 0.00 | 2.49 |
| 0.01-1.99 units | 21.62 | 17.87 | 1.09 | 2.64 |
| 2.0-3.99 units | 21.25 | 15.70 | 2.76 | 2.78 |
| 4.0-5.99 units | 20.94 | 13.45 | 4.73 | 2.72 |
| 6.0-7.99 units | 21.03 | 11.90 | 6.70 | 2.41 |
| 8.0 or more units | 22.22 | 10.51 | 9.43 | 2.25 |
| Total specific labor market preparation units | | | | |
| 0.0units | 21.58 | 17.44 | 1.50 | 2.59 |
| 0.01-1.99units | 21.28 | 15.86 | 2.65 | 2.75 |
| 2.0-3.99units | 21.05 | 13.78 | 4.59 | 2.65 |
| 4.0-5.99 units | 21.25 | 12.31 | 6.37 | 2.54 |
| 6.0 or more units | 21.90 | 10.75 | 8.88 | 2.25 |

Source: National Center for Education Statistics, High School and Beyond, 1980 Sophomore Cohort.

Table 2 .--Percentage of public high school graduates with different numbers of Carnegie units accumulated in vocational education: 1982

| | 0.00 units | 0.01-0.99 units | 1.00-1.99 units | 2.00-2.99 units | 3.00-3.99 units | 4.00-4.99 units | 5.00-5.99 units | 6.00-6.99 units | 7.00-7.99 units | 8.00 or more units |
|---|---|---|---|---|---|---|---|---|---|---|
| Total | 2.32 | 3.84 | 11.45 | 12.43 | 12.43 | 12.78 | 11.78 | 9.76 | 8.49 | 14.70 |
| Sex | | | | | | | | | | |
| Male | 2.46 | 3.72 | 11.44 | 12.93 | 12.12 | 13.80 | 11.14 | 8.70 | 9.16 | 14.53 |
| Female | 2.19 | 3.95 | 11.47 | 11.97 | 12.73 | 11.84 | 12.38 | 10.75 | 7.87 | 14.85 |
| Race/ethnicity | | | | | | | | | | |
| White | 2.79 | 4.55 | 12.08 | 12.63 | 12.69 | 12.07 | 11.28 | 9.19 | 8.38 | 14.35 |
| Black | 0.80 | 1.31 | 10.04 | 11.47 | 13.17 | 16.38 | 15.08 | 10.17 | 7.45 | 14.14 |
| Hispanic | 1.01 | 1.53 | 7.85 | 11.33 | 10.50 | 14.38 | 11.93 | 12.22 | 9.95 | 19.29 |
| Asian | 3.96 | 8.20 | 20.24 | 18.43 | 14.28 | 13.42 | 8.28 | 5.29 | 3.45 | 4.45 |
| Native American | 0.61 | 2.72 | 7.31 | 11.03 | 9.09 | 9.74 | 20.41 | 18.04 | 8.97 | 12.07 |
| Socioeconomic status | | | | | | | | | | |
| Lowest quartile | 0.51 | 1.47 | 6.52 | 7.23 | 11.33 | 13.50 | 12.45 | 13.60 | 11.88 | 21.50 |
| Second quartile | 1.53 | 2.47 | 8.03 | 10.31 | 11.64 | 14.52 | 13.46 | 10.85 | 9.73 | 17.45 |
| Third quartile | 2.59 | 3.76 | 11.22 | 16.14 | 11.87 | 13.26 | 12.66 | 7.57 | 7.52 | 13.40 |
| Highest quartile | 5.02 | 7.95 | 20.93 | 17.07 | 15.26 | 9.43 | 8.23 | 6.44 | 4.05 | 5.63 |
| Urbanicity | | | | | | | | | | |
| Urban | 2.83 | 4.34 | 15.17 | 12.69 | 12.82 | 13.84 | 11.69 | 8.88 | 6.17 | 11.57 |
| Suburban | 2.79 | 4.92 | 12.41 | 13.86 | 12.79 | 12.00 | 11.10 | 8.98 | 8.27 | 12.87 |
| Rural | 1.34 | 1.96 | 7.87 | 10.17 | 11.68 | 13.33 | 12.84 | 11.43 | 10.16 | 19.23 |
| High school grades | | | | | | | | | | |
| Mostly As | 6.46 | 8.61 | 22.24 | 17.12 | 13.73 | 8.36 | 7.58 | 5.03 | 3.74 | 7.14 |
| Mostly Bs | 2.51 | 4.35 | 12.95 | 13.74 | 12.46 | 11.66 | 10.88 | 9.14 | 7.31 | 15.01 |
| Mostly Cs | 0.88 | 1.99 | 6.46 | 9.06 | 11.72 | 14.95 | 13.94 | 11.98 | 11.08 | 17.94 |
| Mostly below C | 0.41 | 0.97 | 6.10 | 11.61 | 12.85 | 16.88 | 14.54 | 11.79 | 11.77 | 13.08 |

Table 2.--Percentage of public high school graduates with different numbers of Carnegie units accumulated in vocational education: 1982--Continued

| | 0.00 units | 0.01-0.99 units | 1.00-1.99 units | 2.00-2.99 units | 3.00-3.99 units | 4.00-4.99 units | 5.00-5.99 units | 6.00-6.99 units | 7.00-7.99 units | 8.00 or more units |
|---|---|---|---|---|---|---|---|---|---|---|
| Parent's education | | | | | | | | | | |
| Less than high school grad. | 0.24 | 1.22 | 6.50 | 7.40 | 10.74 | 12.82 | 14.36 | 12.51 | 13.68 | 20.54 |
| High school graduate | 1.17 | 2.20 | 6.17 | 10.05 | 10.54 | 12.52 | 12.04 | 12.44 | 11.50 | 21.37 |
| Some postsecondary | 2.41 | 3.70 | 10.55 | 12.79 | 13.72 | 13.15 | 13.75 | 8.31 | 7.66 | 13.95 |
| 4-year college degree | 4.82 | 7.33 | 19.88 | 17.92 | 14.02 | 10.62 | 8.79 | 6.77 | 3.77 | 6.08 |
| Family income | | | | | | | | | | |
| Less than $15,000 | 1.08 | 2.47 | 7.70 | 10.36 | 12.15 | 11.22 | 12.11 | 12.22 | 10.68 | 20.01 |
| $15,000-24,999 | 2.02 | 2.75 | 8.60 | 12.49 | 12.57 | 12.66 | 13.01 | 10.69 | 9.60 | 15.62 |
| $25,000-39,999 | 3.03 | 4.61 | 12.80 | 13.93 | 11.98 | 12.63 | 10.40 | 8.44 | 8.45 | 13.72 |
| $40,000 or more | 4.50 | 6.56 | 18.57 | 14.64 | 14.47 | 11.61 | 9.13 | 7.98 | 4.71 | 7.84 |
| Community type | | | | | | | | | | |
| Rural | 0.38 | 1.44 | 4.77 | 9.25 | 11.49 | 10.53 | 11.69 | 13.09 | 11.86 | 25.50 |
| Medium city | 2.66 | 4.07 | 12.06 | 12.42 | 12.12 | 12.55 | 12.07 | 9.95 | 8.33 | 13.76 |
| Suburb | 2.69 | 4.86 | 11.85 | 13.78 | 12.71 | 11.61 | 11.94 | 10.36 | 8.25 | 11.95 |
| Large city | 3.41 | 5.21 | 13.80 | 14.86 | 14.21 | 14.08 | 11.93 | 6.38 | 5.26 | 10.86 |
| Student's Feb. 83 job status | | | | | | | | | | |
| Full-time job | 1.51 | 2.62 | 6.64 | 10.13 | 10.26 | 13.49 | 12.13 | 10.30 | 10.68 | 22.24 |
| Part-time job | 2.22 | 4.34 | 12.40 | 14.83 | 14.27 | 11.43 | 11.93 | 9.89 | 7.37 | 11.31 |
| Unemployed | 1.22 | 1.23 | 4.54 | 8.55 | 9.60 | 9.85 | 19.05 | 12.73 | 11.12 | 22.11 |
| Not in labor force | 3.52 | 5.19 | 14.93 | 13.42 | 13.57 | 12.42 | 10.53 | 8.98 | 6.83 | 10.59 |

Source: National Center for Education Statistics, High School and Beyond, Sophomore Cohort.

Table 3.--Percentage of public high school graduates who participated in different types of vocational education: 1982

| | Consumer and homemaking | General labor market preparation | | | Specific labor market preparation |
|---|---|---|---|---|---|
| | | Industrial arts | Career education | Total | |
| Total | 49.92 | 13.99 | 15.97 | 78.62 | 86.66 |
| Sex | | | | | |
| Male | 33.68 | 24.57 | 16.57 | 71.33 | 89.51 |
| Female | 64.99 | 4.16 | 15.40 | 85.38 | 84.02 |
| Race/ethnicity | | | | | |
| White | 47.62 | 13.62 | 13.97 | 79.21 | 86.16 |
| Black | 60.41 | 11.26 | 20.77 | 76.08 | 87.00 |
| Hispanic | 55.94 | 18.90 | 21.14 | 76.91 | 89.60 |
| Asian | 34.96 | 10.99 | 32.97 | 78.21 | 77.89 |
| Native American | 50.63 | 24.76 | 17.71 | 84.77 | 93.53 |
| Socioeconomic status | | | | | |
| Lowest quartile | 59.46 | 16.49 | 16.94 | 77.81 | 91.16 |
| Second quartile | 53.42 | 17.38 | 17.50 | 81.05 | 90.04 |
| Third quartile | 48.32 | 13.30 | 15.46 | 78.80 | 86.29 |
| Highest quartile | 36.80 | 8.50 | 12.77 | 76.96 | 78.19 |
| Urbanicity | | | | | |
| Urban | 47.22 | 13.16 | 16.62 | 74.66 | 85.81 |
| Suburban | 46.85 | 12.24 | 16.75 | 77.75 | 86.00 |
| Rural | 56.03 | 17.07 | 14.42 | 82.20 | 88.14 |
| High school grades | | | | | |
| Mostly As | 36.71 | 6.17 | 11.05 | 79.71 | 74.50 |
| Mostly Bs | 48.86 | 11.09 | 15.71 | 79.63 | 86.03 |
| Mostly Cs | 55.58 | 18.60 | 17.99 | 78.47 | 91.65 |
| Mostly below C | 54.46 | 22.50 | 17.33 | 72.81 | 89.93 |
| Parent's education | | | | | |
| Less than high school grad. | 60.15 | 16.24 | 18.67 | 77.34 | 92.18 |
| High school graduate | 55.05 | 16.43 | 15.96 | 80.77 | 91.89 |
| Some postsecondary | 48.63 | 12.11 | 16.09 | 78.55 | 86.47 |
| 4-year college degree | 39.31 | 9.73 | 12.81 | 75.77 | 78.34 |
| Family income | | | | | |
| Less than $15,000 | 57.24 | 15.19 | 17.16 | 78.30 | 88.40 |
| $15,000-24,999 | 52.13 | 14.98 | 14.03 | 79.66 | 88.70 |
| $25,000-39,999 | 45.01 | 13.34 | 14.36 | 79.03 | 85.24 |
| $40,000 or more | 39.94 | 8.09 | 15.16 | 76.08 | 81.74 |
| Community type | | | | | |
| Rural | 56.23 | 18.22 | 12.83 | 80.61 | 91.99 |
| Medium city | 49.00 | 12.52 | 14.47 | 80.04 | 85.22 |
| Suburb | 47.69 | 12.67 | 18.61 | 77.54 | 86.15 |
| Large city | 46.04 | 10.43 | 19.02 | 74.73 | 85.27 |

Table 3.--Percentage of public high school graduates who participated in different types of vocational education: 1982--Continued

| | Consumer and homemaking | General labor market preparation | | | Specific labor market preparation |
|---|---|---|---|---|---|
| | | Industrial arts | Career education | Total | |
| Student's Feb. 83 job status | | | | | |
| Full-time job | 48.91 | 19.08 | 18.13 | 77.35 | 91.41 |
| Part-time job | 50.40 | 11.01 | 15.80 | 80.51 | 86.23 |
| Unemployed | 58.66 | 10.07 | 17.56 | 76.03 | 91.45 |
| Not in labor force | 47.39 | 10.83 | 12.98 | 77.81 | 81.82 |
| Total vocational units | | | | | |
| 0.0 units | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.01-1.99 units | 23.63 | 3.58 | 8.00 | 69.75 | 53.91 |
| 2.0-3.99 units | 48.16 | 11.01 | 13.33 | 80.49 | 88.93 |
| 4.0-5.99units | 59.06 | 15.44 | 19.05 | 83.95 | 96.57 |
| 6.0-7.99 units | 60.51 | 19.81 | 19.97 | 82.88 | 98.85 |
| 8.0 or more units | 59.67 | 22.41 | 21.10 | 82.88 | 98.88 |
| Total specific labor market preparation units | | | | | |
| 0.0 units | 39.20 | 9.22 | 12.89 | 76.96 | 0.00 |
| 0.01-1.99 units | 51.81 | 10.45 | 15.97 | 78.16 | 100.00 |
| 2.0-3.99 units | 57.56 | 15.05 | 18.59 | 84.35 | 100.00 |
| 4.0-5.99 units | 50.13 | 17.45 | 16.86 | 80.10 | 100.00 |
| 6.0 or more units | 40.99 | 18.32 | 12.54 | 67.93 | 100.00 |

Source: National Center for Education Statistics, High School and Beyond, 1980 Sophomore Cohort.

Table 4.--Average number of vocational education Carnegie units completed by public high school graduates: 1982

| | Consumer and homemaking | General labor market preparation | | | Specific labor market preparation |
|---|---|---|---|---|---|
| | | Industrial arts | Career exploration | Total | |
| Total | 0.68 | 0.17 | 0.18 | 1.01 | 2.93 |
| Sex | | | | | |
| Male | 0.30 | 0.31 | 0.19 | 0.96 | 3.35 |
| Female | 1.02 | 0.04 | 0.17 | 1.07 | 2.55 |
| Race/ethnicity | | | | | |
| White | 0.62 | 0.16 | 0.15 | 0.99 | 2.90 |
| Black | 0.90 | 0.12 | 0.26 | 1.03 | 2.85 |
| Hispanic | 0.87 | 0.24 | 0.28 | 1.15 | 3.24 |
| Asian | 0.29 | 0.11 | 0.25 | 0.92 | 1.92 |
| Native American | 0.54 | 0.22 | 0.17 | 1.10 | 3.46 |
| Socioeconomic status | | | | | |
| Lowest quartile | 0.95 | 0.21 | 0.20 | 1.12 | 3.49 |
| Second quartile | 0.74 | 0.21 | 0.20 | 1.11 | 3.27 |
| Third quartile | 0.60 | 0.17 | 0.16 | 0.99 | 2.85 |
| Highest quartile | 0.39 | 0.08 | 0.12 | 0.82 | 2.02 |
| Urbanicity | | | | | |
| Urban | 0.57 | 0.15 | 0.18 | 0.91 | 2.75 |
| Suburban | 0.58 | 0.13 | 0.20 | 0.98 | 2.82 |
| Rural | 0.88 | 0.23 | 0.14 | 1.12 | 3.21 |
| High school grades | | | | | |
| Mostly As | 0.49 | 0.07 | 0.10 | 0.85 | 1.82 |
| Mostly Bs | 0.66 | 0.13 | 0.16 | 0.99 | 2.83 |
| Mostly Cs | 0.75 | 0.22 | 0.22 | 1.10 | 3.45 |
| Mostly below C | 0.77 | 0.29 | 0.22 | 1.07 | 3.20 |
| Parent's education | | | | | |
| Less than high school grad. | 0.97 | 0.20 | 0.23 | 1.15 | 3.48 |
| High school graduate | 0.82 | 0.21 | 0.18 | 1.12 | 3.56 |
| Some postsecondary | 0.62 | 0.14 | 0.17 | 1.01 | 2.91 |
| 4-year college degree | 0.43 | 0.11 | 0.13 | 0.83 | 2.07 |
| Family income | | | | | |
| Less than $15,000 | 0.91 | 0.19 | 0.21 | 1.11 | 3.23 |
| $15,000-24,999 | 0.70 | 0.20 | 0.16 | 1.06 | 3.17 |
| $25,000-39,999 | 0.58 | 0.15 | 0.15 | 0.96 | 2.88 |
| $40,000 or more | 0.43 | 0.09 | 0.18 | 0.88 | 2.27 |
| Community type | | | | | |
| Rural | 0.93 | 0.24 | 0.18 | 1.17 | 3.67 |
| Medium city | 0.68 | 0.15 | 0.16 | 1.02 | 2.87 |
| Suburb | 0.57 | 0.14 | 0.20 | 0.99 | 2.84 |
| Large city | 0.55 | 0.13 | 0.19 | 0.92 | 2.55 |

Table 4.--Average number of vocational education Carnegieunits completed by public high school graduates: 1982--Continued

| | Consumer and homemaking | General labor market preparation | | | Specific labor market preparation |
|---|---|---|---|---|---|
| | | Industrial arts | Career exploration | Total | |
| Student's Feb. 83 job status | | | | | |
| Full-time job | 0.64 | 0.24 | 0.22 | 1.10 | 3.70 |
| Part-time job | 0.65 | 0.13 | 0.15 | 0.99 | 2.66 |
| Unemployed | 0.89 | 0.11 | 0.25 | 1.18 | 3.67 |
| Not in labor force | 0.69 | 0.14 | 0.14 | 0.94 | 2.44 |
| Total vocational units | | | | | |
| 0.0 units | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.01-1.99 units | 0.14 | 0.03 | 0.04 | 0.50 | 0.44 |
| 2.0-3.99 units | 0.49 | 0.11 | 0.10 | 0.82 | 1.45 |
| 4.0-5.99 units | 0.80 | 0.19 | 0.19 | 1.10 | 2.83 |
| 6.0-7.99 units | 0.99 | 0.24 | 0.27 | 1.28 | 4.42 |
| 8.0 or more units | 1.05 | 0.30 | 0.35 | 1.56 | 6.82 |
| Total specific labor market units | | | | | |
| 0.0 units | 0.56 | 0.13 | 0.21 | 0.94 | 0.00 |
| >0.0-1.9 units | 0.71 | 0.13 | 0.17 | 0.94 | 1.00 |
| 2.0-3.9 units | 0.83 | 0.18 | 0.21 | 1.11 | 2.65 |
| 4.0-5.9 units | 0.64 | 0.20 | 0.17 | 1.12 | 4.61 |
| 6.0 or more units | 0.46 | 0.20 | 0.11 | 0.90 | 7.52 |

Source: National Center for Education Statistics, High School and Beyond, 1980 Sophomore Cohort.

Table 5 .--Percentage of public high school graduates with different numbers of Carnegie units accumulated in specific labor market preparation vocational education: 1982

| | 0.00 units | 0.01-0.99 units | 1.00-1.99 units | 2.00-2.99 units | 3.00-3.99 units | 4.00 or more units |
|---|---|---|---|---|---|---|
| Total | 13.34 | 7.40 | 18.14 | 16.25 | 13.08 | 31.80 |
| Sex | | | | | | |
| Male | 10.49 | 6.65 | 15.80 | 15.56 | 13.58 | 37.92 |
| Female | 15.98 | 8.09 | 20.32 | 16.88 | 12.61 | 26.12 |
| Race/ethnicity | | | | | | |
| White | 13.84 | 7.48 | 18.52 | 16.11 | 12.53 | 31.51 |
| Black | 13.00 | 7.23 | 17.69 | 18.40 | 13.76 | 29.90 |
| Hispanic | 10.40 | 6.57 | 16.09 | 15.90 | 16.13 | 34.91 |
| Asian | 22.11 | 9.62 | 21.45 | 17.81 | 11.23 | 17.79 |
| Native American | 6.47 | 3.93 | 16.48 | 11.91 | 16.11 | 45.10 |
| Socioeconomic status | | | | | | |
| Lowest quartile | 8.84 | 4.46 | 14.14 | 16.43 | 14.81 | 41.32 |
| Second quartile | 9.96 | 7.29 | 15.80 | 16.79 | 12.88 | 37.29 |
| Third quartile | 13.71 | 7.37 | 19.92 | 16.13 | 13.43 | 29.44 |
| Highest quartile | 21.81 | 10.38 | 23.68 | 15.80 | 10.95 | 17.39 |
| Urbanicity | | | | | | |
| Urban | 14.19 | 8.50 | 18.94 | 17.01 | 12.96 | 28.40 |
| Suburban | 14.00 | 8.20 | 19.07 | 15.78 | 12.82 | 30.12 |
| Rural | 11.86 | 5.56 | 16.30 | 16.50 | 13.52 | 36.26 |
| High school grades | | | | | | |
| Mostly As | 25.50 | 11.51 | 24.41 | 14.27 | 8.48 | 15.83 |
| Mostly Bs | 13.97 | 8.05 | 19.10 | 15.74 | 13.12 | 30.01 |
| Mostly Cs | 8.35 | 5.25 | 14.87 | 17.32 | 14.89 | 39.32 |
| Mostly below C | 10.07 | 5.72 | 16.09 | 17.74 | 13.28 | 37.10 |
| Parent's education | | | | | | |
| Less than high school grad. | 7.82 | 3.36 | 14.35 | 16.85 | 16.76 | 40.87 |
| High school graduate | 8.11 | 6.54 | 14.61 | 15.93 | 13.63 | 41.18 |
| Some postsecondary | 13.53 | 7.02 | 18.34 | 15.88 | 13.76 | 31.46 |
| 4-year college degree | 21.66 | 10.76 | 21.84 | 16.79 | 11.38 | 17.57 |
| Family income | | | | | | |
| Less than $15,000 | 11.60 | 6.19 | 14.78 | 16.10 | 13.16 | 38.16 |
| $15,000-24,999 | 11.30 | 6.28 | 17.56 | 15.94 | 13.81 | 35.12 |
| $25,000-39,999 | 14.76 | 7.21 | 17.94 | 17.37 | 12.33 | 30.41 |
| $40,000 or more | 18.26 | 9.91 | 21.73 | 16.87 | 13.08 | 20.14 |
| Community type | | | | | | |
| Rural | 8.01 | 4.85 | 13.40 | 16.12 | 13.38 | 44.23 |
| Medium city | 14.78 | 7.11 | 18.31 | 15.84 | 13.72 | 30.23 |
| Suburb | 13.85 | 8.44 | 17.09 | 16.49 | 12.92 | 31.21 |
| Large city | 14.73 | 10.28 | 20.41 | 16.32 | 13.05 | 25.23 |

Table 5.--Percentage of public high school graduates with different numbers of Carnegie units accumulated in specific labor market preparation vocational education: 1982--Continued

| | 0.00 units | 0.01-0.99 units | 1.00-1.99 units | 2.00-2.99 units | 3.00-3.99 units | 4.00 or more units |
|---|---|---|---|---|---|---|
| Student's Feb. 83 job status | | | | | | |
| Full-time job | 8.59 | 5.11 | 14.26 | 14.44 | 13.98 | 43.61 |
| Part-time job | 13.77 | 8.32 | 19.83 | 18.18 | 12.39 | 27.51 |
| Unemployed | 8.55 | 4.76 | 13.36 | 13.32 | 15.71 | 44.30 |
| Not in labor force | 18.18 | 9.05 | 19.18 | 16.61 | 13.22 | 23.76 |

Source: National Center for Education Statistics, High School and Beyond, 1980 Sophomore Cohort.

Table 6 .--Percentage of public high school graduates participating in specific labor market preparation vocational education, by program area: 1982

| | Agriculture | Business | Marketing and distribution | Health | Occupat-ional home econmics | Trade and Industry | | | | Technical/ commun-ications |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | All programs | Construct-ion | Precision product-ion | Other | |
| Total | 9.94 | 52.94 | 9.09 | 4.48 | 11.49 | 39.55 | 7.27 | 33.16 | 13.31 | 12.93 |
| Sex | | | | | | | | | | |
| Male | 14.73 | 38.50 | 8.54 | 3.15 | 4.55 | 64.65 | 14.13 | 53.72 | 25.29 | 15.24 |
| Female | 5.49 | 66.35 | 9.60 | 5.72 | 17.94 | 16.25 | 0.90 | 14.08 | 2.18 | 10.79 |
| Race/ethnicity | | | | | | | | | | |
| White | 10.17 | 53.64 | 8.89 | 3.99 | 11.32 | 38.59 | 7.07 | 32.52 | 13.29 | 14.08 |
| Black | 7.19 | 52.64 | 11.95 | 7.21 | 13.39 | 36.00 | 7.73 | 28.20 | 8.58 | 11.04 |
| Hispanic | 11.37 | 53.42 | 8.40 | 4.91 | 12.06 | 44.80 | 8.54 | 37.85 | 15.27 | 8.25 |
| Asian | 4.34 | 37.31 | 3.08 | 4.98 | 4.82 | 44.97 | 3.84 | 37.20 | 13.90 | 15.20 |
| Native American | 15.01 | 41.24 | 7.82 | 5.49 | 8.71 | 58.86 | 7.84 | 52.57 | 32.83 | 5.95 |
| Socioeconomic status | | | | | | | | | | |
| Lowest quartile | 11.23 | 58.33 | 10.65 | 5.36 | 14.47 | 39.23 | 9.11 | 31.06 | 14.04 | 9.69 |
| Second quartile | 11.82 | 56.48 | 8.71 | 4.51 | 12.54 | 41.72 | 7.36 | 35.76 | 14.28 | 11.53 |
| Third quartile | 10.78 | 52.73 | 9.55 | 4.79 | 10.89 | 39.29 | 7.22 | 33.45 | 13.62 | 13.78 |
| Highest quartile | 5.60 | 43.55 | 7.12 | 3.41 | 7.90 | 37.21 | 5.25 | 31.67 | 10.66 | 17.06 |
| Urbanicity | | | | | | | | | | |
| Urban | 4.68 | 48.52 | 10.71 | 5.21 | 10.25 | 39.44 | 6.20 | 35.00 | 10.81 | 15.58 |
| Suburban | 7.16 | 50.39 | 9.58 | 3.96 | 11.06 | 40.90 | 6.61 | 34.94 | 14.33 | 15.51 |
| Rural | 17.13 | 59.30 | 7.43 | 4.83 | 12.85 | 37.62 | 8.88 | 29.44 | 13.23 | 7.56 |
| High school grades | | | | | | | | | | |
| Mostly As | 4.79 | 48.63 | 3.60 | 2.78 | 6.33 | 22.55 | 2.41 | 19.26 | 5.00 | 16.88 |
| Mostly Bs | 10.52 | 55.24 | 8.12 | 4.17 | 11.82 | 36.04 | 5.93 | 30.61 | 11.12 | 13.40 |
| Mostly Cs | 10.44 | 53.44 | 11.51 | 5.32 | 12.95 | 48.03 | 9.47 | 39.81 | 18.13 | 11.29 |
| Mostly below C | 13.40 | 47.25 | 13.13 | 5.47 | 12.55 | 50.70 | 12.88 | 41.79 | 18.56 | 10.80 |

Table 6 .--Percentage of public high school graduates participating in specific labor market preparation vocational education, by program area: 1982--Continued

| | Agriculture | Business | Marketing and distribution | Health | Occupat-ional home econmics | Trade and Industry | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | All programs | Construct-ion | Precision product-ion | Other | Technical/ commun-ications |
| Parent's education | | | | | | | | | | |
| Less than high school grad. | 11.34 | 59.74 | 12.02 | 5.14 | 16.48 | 36.95 | 6.38 | 31.43 | 10.93 | 8.23 |
| High school graduate | 11.47 | 59.37 | 10.83 | 5.27 | 13.55 | 43.06 | 9.34 | 34.82 | 16.16 | 11.49 |
| Some postsecondary | 10.75 | 53.47 | 8.24 | 4.85 | 12.07 | 38.58 | 7.16 | 31.78 | 13.59 | 12.42 |
| 4-year college degree | 7.47 | 43.21 | 7.43 | 2.93 | 7.75 | 36.84 | 5.65 | 31.58 | 10.00 | 16.69 |
| Family income | | | | | | | | | | |
| Less than $15,000 | 12.41 | 54.41 | 10.19 | 5.08 | 12.20 | 37.93 | 8.21 | 29.92 | 13.02 | 9.63 |
| $15,000-24,999 | 9.70 | 56.51 | 10.28 | 4.88 | 12.14 | 40.81 | 7.97 | 34.11 | 14.79 | 12.07 |
| $25,000-39,999 | 9.47 | 52.66 | 8.44 | 3.78 | 11.68 | 39.89 | 6.98 | 33.61 | 12.88 | 13.67 |
| $40,000 or more | 6.49 | 47.06 | 8.75 | 3.71 | 9.06 | 38.84 | 5.27 | 33.81 | 11.94 | 16.55 |
| Community type | | | | | | | | | | |
| Rural | 21.64 | 59.54 | 6.19 | 4.93 | 12.69 | 41.80 | 9.55 | 32.66 | 15.44 | 9.23 |
| Medium city | 8.71 | 54.45 | 9.51 | 4.39 | 12.12 | 36.51 | 7.01 | 30.34 | 11.74 | 12.09 |
| Suburb | 6.59 | 48.24 | 8.90 | 3.97 | 12.64 | 42.36 | 7.28 | 35.70 | 14.41 | 16.18 |
| Large city | 6.73 | 48.43 | 12.59 | 4.53 | 10.48 | 38.13 | 5.31 | 33.01 | 10.91 | 15.27 |
| Student's Feb. 83 job status | | | | | | | | | | |
| Full-time job | 13.78 | 51.85 | 11.21 | 4.67 | 11.23 | 49.00 | 10.50 | 39.59 | 19.14 | 11.41 |
| Part-time job | 8.42 | 55.36 | 8.12 | 4.20 | 10.90 | 36.97 | 6.05 | 31.45 | 10.20 | 15.49 |
| Unemployed | 10.94 | 55.99 | 10.72 | 3.10 | 18.73 | 41.65 | 9.53 | 32.15 | 17.24 | 9.09 |
| Not in labor force | 8.21 | 51.61 | 8.30 | 4.28 | 11.90 | 33.03 | 5.63 | 27.97 | 9.85 | 12.90 |

Table 6.--Percentage of public high school graduates participating in specific labor market preparation vocational education, by program area: 1982--Continued

| | Agriculture | Business | Marketing and distribution | Health | Occupat-ional home econmics | Trade and Industry | | | | Technical/ commun-ications |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | All programs | Construct-ion | Precision product-ion | Other | |
| Total vocational units | | | | | | | | | | |
| 0.0 units | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.1-1.99 units | 1.94 | 19.36 | 1.44 | 3.64 | 3.59 | 18.14 | 1.61 | 15.21 | 2.35 | 13.68 |
| 2.0-3.99 units | 6.73 | 53.00 | 5.16 | 4.27 | 7.38 | 37.27 | 4.51 | 31.88 | 8.90 | 14.96 |
| 4.0-5.99 units | 10.14 | 62.87 | 12.66 | 3.58 | 13.80 | 46.21 | 7.81 | 38.46 | 15.45 | 15.28 |
| 6.0-7.99 units | 14.61 | 64.57 | 14.09 | 4.69 | 16.25 | 47.81 | 11.15 | 40.34 | 19.40 | 10.26 |
| 8.0 or more units | 19.15 | 65.11 | 13.00 | 7.69 | 18.72 | 50.56 | 13.28 | 41.49 | 23.13 | 10.15 |
| Total specific labor market preparation units | | | | | | | | | | |
| 0.0 units | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.01-1.99 units | 5.45 | 53.34 | 3.52 | 5.11 | 9.90 | 30.83 | 2.99 | 25.87 | 5.35 | 16.31 |
| 2.0-3.99 units | 8.73 | 68.84 | 11.46 | 4.69 | 13.96 | 46.14 | 6.68 | 39.24 | 12.95 | 16.52 |
| 4.0-5.99 units | 15.40 | 66.01 | 17.37 | 5.25 | 15.21 | 51.39 | 10.77 | 44.42 | 21.04 | 13.84 |
| 6.0 or more units | 22.71 | 53.55 | 12.75 | 6.13 | 15.42 | 63.51 | 18.32 | 50.61 | 30.76 | 10.62 |

Source: National Center for Education Statistics, High School and Beyond, Sophomore Cohort.

Table 7.--Carnegie units accumulated by public high school graduates participating in specific labor market preparation vocational education, by program area: 1982

| | Agriculture | Business | Marketing and distribution | Health | Occupat-ional home econmics | Trade and Industry | | | | Technical/ commun-ications |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | All programs | Construct-ion | Precision product-ion | Other | |
| Total | 0.21 | 1.03 | 0.16 | 0.05 | 0.17 | 1.06 | 0.13 | 0.66 | 0.26 | 0.11 |
| Sex | | | | | | | | | | |
| Male | 0.35 | 0.48 | 0.14 | 0.02 | 0.05 | 1.98 | 0.26 | 1.19 | 0.53 | 0.14 |
| Female | 0.08 | 1.54 | 0.18 | 0.08 | 0.29 | 0.20 | 0.01 | 0.17 | 0.02 | 0.09 |
| Race/ethnicity | | | | | | | | | | |
| White | 0.23 | 1.06 | 0.15 | 0.04 | 0.17 | 1.00 | 0.11 | 0.64 | 0.25 | 0.12 |
| Black | 0.10 | 0.97 | 0.22 | 0.13 | 0.22 | 0.97 | 0.21 | 0.57 | 0.20 | 0.11 |
| Hispanic | 0.23 | 0.99 | 0.15 | 0.06 | 0.20 | 1.37 | 0.17 | 0.84 | 0.36 | 0.07 |
| Asian | 0.06 | 0.57 | 0.04 | 0.03 | 0.05 | 0.87 | 0.04 | 0.63 | 0.20 | 0.16 |
| Native American | 0.26 | 0.73 | 0.13 | 0.07 | 0.10 | 1.84 | 0.20 | 1.19 | 0.46 | 0.05 |
| Socioeconomic status | | | | | | | | | | |
| Lowest quartile | 0.24 | 1.29 | 0.20 | 0.08 | 0.26 | 1.17 | 0.18 | 0.66 | 0.33 | 0.10 |
| Second quartile | 0.25 | 1.13 | 0.16 | 0.04 | 0.19 | 1.21 | 0.15 | 0.77 | 0.29 | 0.11 |
| Third quartile | 0.26 | 0.98 | 0.16 | 0.05 | 0.13 | 1.04 | 0.11 | 0.67 | 0.25 | 0.12 |
| Highest quartile | 0.08 | 0.69 | 0.12 | 0.03 | 0.10 | 0.75 | 0.08 | 0.51 | 0.16 | 0.13 |
| Urbanicity | | | | | | | | | | |
| Urban | 0.06 | 0.94 | 0.20 | 0.06 | 0.22 | 1.00 | 0.11 | 0.69 | 0.19 | 0.14 |
| Suburban | 0.14 | 0.97 | 0.16 | 0.05 | 0.16 | 1.06 | 0.10 | 0.70 | 0.27 | 0.14 |
| Rural | 0.40 | 1.17 | 0.13 | 0.05 | 0.16 | 1.08 | 0.19 | 0.59 | 0.30 | 0.06 |
| High school grades | | | | | | | | | | |
| Mostly As | 0.10 | 1.03 | 0.05 | 0.02 | 0.08 | 0.37 | 0.02 | 0.29 | 0.06 | 0.14 |
| Mostly Bs | 0.22 | 1.11 | 0.15 | 0.05 | 0.16 | 0.90 | 0.10 | 0.60 | 0.19 | 0.11 |
| Mostly Cs | 0.23 | 1.00 | 0.20 | 0.07 | 0.22 | 1.43 | 0.18 | 0.85 | 0.40 | 0.11 |
| Mostly below C | 0.27 | 0.74 | 0.22 | 0.05 | 0.22 | 1.46 | 0.22 | 0.84 | 0.40 | 0.10 |

Table 7.--Carnegie units accumulated by public high school graduates participating in specific labor market preparation vocational education, by program area: 1982--Continued

| | Agriculture | Business | Marketing and distribution | Health | Occupat-ional home econmics | Trade and Industry | | | Other | Technical/ commun-ications |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | All programs | Construct-ion | Precision product-ion | | |
| Parent's education | | | | | | | | | | |
| Less than high school grad. | 0.23 | 1.38 | 0.24 | .07 | 0.36 | 0.98 | 0.14 | 0.65 | 0.19 | 0.09 |
| High school graduate | 0.26 | 1.22 | 0.21 | .06 | 0.21 | 1.31 | 0.18 | 0.76 | 0.37 | 0.12 |
| Some postsecondary | 0.24 | 1.07 | 0.12 | .05 | 0.18 | 1.01 | 0.14 | 0.63 | 0.24 | 0.10 |
| 4-year college degree | 0.14 | 0.66 | 0.12 | .03 | 0.08 | 0.80 | 0.08 | 0.54 | 0.18 | 0.14 |
| Family income | | | | | | | | | | |
| Less than $15,000 | 0.29 | 1.21 | 0.18 | .08 | 0.18 | 1.03 | 0.16 | 0.59 | 0.28 | 0.09 |
| $15,000-24,999 | 0.19 | 1.14 | 0.18 | .06 | 0.19 | 1.18 | 0.14 | 0.71 | 0.32 | 0.11 |
| $25,000-39,999 | 0.21 | 0.99 | 0.14 | .04 | 0.17 | 1.09 | 0.12 | 0.71 | 0.25 | 0.12 |
| $40,000 or more | 0.10 | 0.75 | 0.15 | .03 | 0.15 | 0.85 | 0.07 | 0.60 | 0.17 | 0.13 |
| Community type | | | | | | | | | | |
| Rural | 0.62 | 1.25 | 0.14 | .06 | 0.16 | 1.21 | 0.20 | 0.71 | 0.31 | 0.09 |
| Medium city | 0.14 | 1.09 | 0.16 | .05 | 0.21 | 0.98 | 0.13 | 0.59 | 0.26 | 0.11 |
| Suburb | 0.13 | 0.91 | 0.16 | .05 | 0.19 | 1.08 | 0.12 | 0.71 | 0.25 | 0.15 |
| Large city | 0.10 | 0.88 | 0.22 | .04 | 0.17 | 0.88 | 0.09 | 0.63 | 0.17 | 0.13 |
| Student's Feb. 83 job status | | | | | | | | | | |
| Full-time job | 0.33 | 1.08 | 0.20 | .06 | 0.18 | 1.56 | 0.22 | 0.91 | 0.43 | 0.10 |
| Part-time job | 0.15 | 1.05 | 0.15 | .05 | 0.17 | 0.83 | 0.09 | 0.57 | 0.18 | 0.15 |
| Unemployed | 0.25 | 1.25 | 0.16 | .03 | 0.39 | 1.24 | 0.24 | 0.69 | 0.31 | 0.08 |
| Not in labor force | 0.15 | 0.95 | 0.15 | .05 | 0.16 | 0.76 | 0.09 | 0.49 | 0.18 | 0.11 |

Table 7.--Carnegie units accumulated by public high school graduates participating in specific labor market preparation vocational education, by program area: 1982--Continued

| | Agriculture | Business | Marketing and distribution | Health | Occupat-ional home econmics | Trade and Industry | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | All programs | Construct-ion | Precision product-ion | Other | Technical/ commun-ications |
| Total vocational units | | | | | | | | | | |
| 0.0 units | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| >0.0-1.99 units | 0.01 | 0.14 | 0.01 | 0.02 | 0.02 | 0.14 | 0.01 | 0.12 | 0.02 | 0.09 |
| 2.0-3.99 units | 0.07 | 0.61 | 0.05 | 0.03 | 0.05 | 0.49 | 0.04 | 0.37 | 0.08 | 0.12 |
| 4.0-5.99 units | 0.16 | 1.09 | 0.19 | 0.04 | 0.16 | 0.98 | 0.09 | 0.69 | 0.20 | 0.13 |
| 6.0-7.99units | 0.37 | 1.48 | 0.26 | 0.08 | 0.28 | 1.63 | 0.21 | 0.99 | 0.43 | 0.11 |
| 8.0 or more units | 0.56 | 2.16 | 0.33 | 0.13 | 0.45 | 2.55 | 0.41 | 1.37 | 0.78 | 0.14 |
| Total specific labor market preparation units | | | | | | | | | | |
| 0.0 units | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.01-1.99 units | 0.04 | 0.47 | 0.03 | 0.03 | 0.06 | 0.25 | 0.02 | 0.20 | 0.03 | 0.10 |
| 2.0-3.99 units | 0.12 | 1.19 | 0.14 | 0.04 | 0.15 | 0.79 | 0.06 | 0.58 | 0.15 | 0.14 |
| 4.0-5.99 units | 0.34 | 1.75 | 0.34 | 0.08 | 0.23 | 1.56 | 0.16 | 1.06 | 0.34 | 0.13 |
| 6.0 or more units | 0.71 | 1.78 | 0.35 | 0.12 | 0.51 | 3.32 | 0.54 | 1.74 | 1.03 | 0.16 |

Source: National Center for Education Statistics, High School and Beyond, Sophomore Cohort.

Table 8.--Percentage of public high school graduates with different numbers of Carnegie units in a specific labor market preparation area: 1982

| | 0.00 units | 0.01-0.49 units | 0.50-0.99 units | 1.00-1.49 units | 1.50-1.99 units | 2.00-2.49 units | 2.50-2.99 units | 3.00-3.49 units | 3.50-3.99 units |
|---|---|---|---|---|---|---|---|---|---|
| Total | 14.15 | 1.00 | 9.03 | 20.15 | 6.34 | 13.14 | 4.55 | 9.72 | 2.79 |
| Sex | | | | | | | | | |
| Male | 11.22 | 1.07 | 8.25 | 20.34 | 6.32 | 13.76 | 4.37 | 10.83 | 3.28 |
| Female | 16.86 | 0.94 | 9.76 | 19.97 | 6.36 | 12.57 | 4.71 | 8.68 | 2.33 |
| Race/ethnicity | | | | | | | | | |
| White | 14.59 | 0.96 | 9.10 | 20.38 | 6.32 | 12.79 | 4.77 | 8.91 | 2.82 |
| Black | 13.79 | 1.26 | 7.92 | 22.15 | 5.83 | 13.39 | 3.95 | 11.70 | 2.03 |
| Hispanic | 11.58 | 1.12 | 8.24 | 17.65 | 6.99 | 15.04 | 4.26 | 11.45 | 3.41 |
| Asian | 23.74 | 1.17 | 11.68 | 21.96 | 9.50 | 15.08 | 0.99 | 6.45 | 1.16 |
| Native American | 7.05 | 0.46 | 6.29 | 18.44 | 5.50 | 14.58 | 5.39 | 22.66 | 2.14 |
| Socioeconomic status | | | | | | | | | |
| Lowest quartile | 9.55 | 0.33 | 6.06 | 17.20 | 5.75 | 15.01 | 5.19 | 11.35 | 2.94 |
| Second quartile | 10.96 | 1.01 | 8.42 | 18.67 | 6.21 | 13.41 | 4.76 | 10.91 | 3.07 |
| Third quartile | 14.54 | 1.13 | 8.93 | 21.47 | 6.92 | 12.17 | 4.69 | 10.03 | 3.39 |
| Highest quartile | 22.55 | 1.65 | 12.52 | 23.94 | 6.67 | 11.85 | 3.58 | 6.04 | 1.52 |
| Urbanicity | | | | | | | | | |
| Urban | 15.47 | 1.15 | 10.47 | 20.24 | 6.35 | 12.91 | 4.44 | 9.20 | 3.26 |
| Suburban | 14.76 | 1.33 | 9.86 | 20.84 | 6.67 | 12.74 | 4.64 | 8.57 | 2.39 |
| Rural | 12.47 | 0.42 | 6.96 | 19.07 | 5.84 | 13.87 | 4.47 | 11.72 | 3.10 |
| High school grades | | | | | | | | | |
| Mostly As | 25.84 | 2.35 | 11.21 | 23.35 | 5.28 | 10.57 | 3.03 | 6.39 | 1.92 |
| Mostly Bs | 14.92 | 0.88 | 9.75 | 20.36 | 6.17 | 12.58 | 4.99 | 9.31 | 2.23 |
| Mostly Cs | 9.24 | 0.74 | 7.31 | 18.12 | 7.30 | 14.43 | 4.48 | 11.77 | 3.83 |
| Mostly below C | 10.69 | 0.45 | 8.49 | 21.70 | 5.25 | 15.02 | 5.08 | 9.16 | 2.87 |

Table 8.--Percentage of public high school graduates with different numbers of Carnegie units in a specific labor market preparation area: 1982--Continued

| | 0.00 units | 0.01-0.49 units | 0.50-0.99 units | 1.00-1.49 units | 1.50-1.99 units | 2.00-2.49 units | 2.50-2.99 units | 3.00-3.49 units | 3.50-3.99 units |
|---|---|---|---|---|---|---|---|---|---|
| Parent's education | | | | | | | | | |
| Less than high school grad. | 8.82 | 0.66 | 3.59 | 17.38 | 6.03 | 16.59 | 5.71 | 12.49 | 3.29 |
| High school graduate | 8.65 | 0.78 | 8.08 | 17.43 | 7.22 | 13.93 | 4.08 | 11.14 | 3.17 |
| Some postsecondary | 14.53 | 0.96 | 8.85 | 19.85 | 6.20 | 12.41 | 5.55 | 9.80 | 2.71 |
| 4-year college degree | 22.18 | 1.72 | 12.26 | 23.75 | 6.40 | 12.16 | 3.50 | 6.24 | 2.14 |
| Family income | | | | | | | | | |
| Less than $15,000 | 12.51 | 0.59 | 7.33 | 18.45 | 5.75 | 12.95 | 4.60 | 10.69 | 3.06 |
| $15,000-24,999 | 11.95 | 0.86 | 6.95 | 19.99 | 6.65 | 14.43 | 5.20 | 10.16 | 2.82 |
| $25,000-39,999 | 15.52 | 1.18 | 8.44 | 20.94 | 6.11 | 12.75 | 4.59 | 9.08 | 2.63 |
| $40,000 or more | 18.82 | 1.40 | 12.26 | 21.87 | 8.21 | 15.03 | 2.73 | 6.80 | 1.23 |
| Community type | | | | | | | | | |
| Rural | 8.54 | 0.43 | 5.98 | 18.07 | 4.14 | 14.86 | 4.54 | 11.92 | 3.27 |
| Medium city | 15.56 | 0.97 | 8.75 | 19.39 | 6.83 | 12.98 | 4.70 | 9.81 | 2.75 |
| Suburb | 14.48 | 1.32 | 9.56 | 20.67 | 7.22 | 12.49 | 4.06 | 9.45 | 2.56 |
| Large city | 15.53 | 1.65 | 12.32 | 20.62 | 7.37 | 13.48 | 4.33 | 7.76 | 2.66 |
| Student's Feb. 83 job status | | | | | | | | | |
| Full-time job | 9.33 | 0.73 | 6.47 | 17.34 | 5.95 | 13.15 | 5.06 | 11.28 | 3.64 |
| Part-time job | 14.72 | 1.37 | 9.32 | 21.58 | 8.04 | 13.23 | 4.40 | 8.29 | 2.16 |
| Unemployed | 9.83 | 0.57 | 6.99 | 17.28 | 3.82 | 15.08 | 3.99 | 13.32 | 2.76 |
| Not in labor force | 18.62 | 1.15 | 10.75 | 21.05 | 6.50 | 12.98 | 4.05 | 8.76 | 2.56 |

Table 8.--Percentage of public high school graduates with different numbers of Carnegie units in a specific labor market preparation area: 1982--Continued

| | 0.00 units | 0.01-0.49 units | 0.50-0.99 units | 1.00-1.49 units | 1.50-1.99 units | 2.00-2.49 units | 2.50-2.99 units | 3.00-3.49 units | 3.50-3.99 units |
|---|---|---|---|---|---|---|---|---|---|
| Total vocational units | | | | | | | | | |
| 0.0 units | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| >0.0-1.99 units | 47.19 | 4.58 | 25.09 | 21.73 | 1.41 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2.0-3.99 units | 12.27 | 0.96 | 14.01 | 42.12 | 10.19 | 14.54 | 2.58 | 2.82 | 0.51 |
| 4.0-5.99 units | 3.80 | 0.15 | 5.37 | 17.60 | 10.17 | 24.02 | 9.13 | 16.51 | 3.73 |
| 6.0-7.99 units | 1.78 | 0.13 | 1.27 | 7.55 | 5.25 | 15.63 | 6.21 | 18.40 | 5.82 |
| 8.0 or more units | 2.04 | 0.00 | 1.08 | 4.40 | 0.92 | 5.26 | 3.60 | 10.88 | 4.65 |
| Total specific labor market preparation units | | | | | | | | | |
| 0.0 units | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.01-1.99 units | 1.50 | 3.86 | 33.37 | 53.91 | 7.37 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2.0-3.99 units | 0.79 | 0.02 | 1.13 | 19.32 | 13.67 | 35.57 | 10.82 | 15.31 | 3.38 |
| 4.0-5.99 units | 0.34 | 0.00 | 0.08 | 2.38 | 2.40 | 13.91 | 6.70 | 22.51 | 6.25 |
| 6.0 or more units | 0.91 | 0.07 | 1.12 | 2.12 | 0.30 | 2.45 | 1.63 | 9.57 | 4.95 |

Source: National Center for Education Statistics, High School and Beyond, Sophomore Cohort.

Table 9.--Average Carnegie units earned by public high school graduates in selected parts of the academic curriculum: 1982

| | English | Advanced or honors english | Mathematics | Calculus & advanced mathematics | Science | Chemistry or physics | Social studies | Fine arts | Foreign language |
|---|---|---|---|---|---|---|---|---|---|
| Total | 3.86 | 0.21 | 2.53 | 0.56 | 2.15 | 0.50 | 3.15 | 1.45 | 0.97 |
| Sex | | | | | | | | | |
| Male | 3.83 | 0.17 | 2.62 | 0.59 | 2.21 | 0.56 | 3.15 | 1.27 | 0.78 |
| Female | 3.88 | 0.25 | 2.45 | 0.53 | 2.10 | 0.44 | 3.16 | 1.61 | 1.14 |
| Race/ethnicity | | | | | | | | | |
| White | 3.83 | 0.24 | 2.58 | 0.63 | 2.23 | 0.56 | 3.19 | 1.51 | 1.02 |
| Black | 4.04 | 0.10 | 2.52 | 0.36 | 2.03 | 0.34 | 3.08 | 1.24 | 0.71 |
| Hispanic | 3.85 | 0.12 | 2.23 | 0.31 | 1.78 | 0.23 | 3.00 | 1.30 | 0.76 |
| Asian | 3.81 | 0.40 | 3.12 | 0.98 | 2.56 | 0.99 | 3.17 | 1.30 | 1.87 |
| Native American | 3.92 | 0.08 | 2.08 | 0.28 | 1.95 | 0.47 | 3.20 | 1.68 | 0.45 |
| Socioeconomic status | | | | | | | | | |
| Lowest quartile | 3.87 | 0.11 | 2.18 | 0.28 | 1.87 | 0.25 | 3.10 | 1.31 | 0.55 |
| Second quartile | 3.80 | 0.17 | 2.37 | 0.47 | 1.99 | 0.40 | 3.14 | 1.42 | 0.80 |
| Third quartile | 3.83 | 0.21 | 2.62 | 0.62 | 2.23 | 0.55 | 3.16 | 1.47 | 1.03 |
| Highest quartile | 3.93 | 0.36 | 3.01 | 0.92 | 2.59 | 0.86 | 3.22 | 1.63 | 1.54 |
| Urbanicity | | | | | | | | | |
| Urban | 3.92 | 0.21 | 2.63 | 0.55 | 2.11 | 0.47 | 3.11 | 1.40 | 1.10 |
| Suburban | 3.82 | 0.24 | 2.62 | 0.61 | 2.17 | 0.55 | 3.18 | 1.44 | 1.09 |
| Rural | 3.88 | 0.16 | 2.34 | 0.49 | 2.14 | 0.44 | 3.14 | 1.48 | 0.71 |
| High school grades | | | | | | | | | |
| Mostly As | 4.00 | 0.54 | 3.34 | 1.31 | 2.94 | 1.16 | 3.12 | 1.65 | 1.67 |
| Mostly Bs | 3.85 | 0.22 | 2.67 | 0.66 | 2.25 | 0.58 | 3.18 | 1.55 | 1.11 |
| Mostly Cs | 3.79 | 0.10 | 2.17 | 0.24 | 1.82 | 0.22 | 3.13 | 1.32 | 0.64 |
| Mostly below C | 3.88 | 0.05 | 2.00 | 0.13 | 1.69 | 0.12 | 3.14 | 1.12 | 0.43 |

Table 9.--Average Carnegie units earned by public high school graduates in selected parts of the academic curriculum: 1982--Continued

| | English | Advanced or honors english | Mathematics | Calculus & advanced mathematics | Science | Chemistry or physics | Social studies | Fine arts | Foreign language |
|---|---|---|---|---|---|---|---|---|---|
| Parent's education | | | | | | | | | |
| Less than high school grad. | 3.91 | 0.11 | 2.11 | 0.26 | 1.85 | 0.22 | 3.00 | 1.36 | 0.53 |
| High school graduate | 3.82 | 0.14 | 2.27 | 0.39 | 1.91 | 0.32 | 3.14 | 1.33 | 0.66 |
| Some postsecondary | 3.83 | 0.23 | 2.57 | 0.59 | 2.17 | 0.51 | 3.18 | 1.45 | 1.02 |
| 4-year college degree | 3.93 | 0.33 | 2.96 | 0.88 | 2.55 | 0.82 | 3.23 | 1.62 | 1.47 |
| Family income | | | | | | | | | |
| Less than $15,000 | 3.89 | 0.13 | 2.28 | 0.37 | 1.92 | 0.31 | 3.15 | 1.42 | 0.62 |
| $15,000-24,999 | 3.88 | 0.21 | 2.43 | 0.51 | 2.08 | 0.45 | 3.14 | 1.44 | 0.84 |
| $25,000-39,999 | 3.91 | 0.26 | 2.63 | 0.66 | 2.29 | 0.58 | 3.17 | 1.50 | 1.09 |
| $40,000 or more | 3.84 | 0.28 | 2.91 | 0.80 | 2.38 | 0.76 | 3.22 | 1.43 | 1.50 |
| Community type | | | | | | | | | |
| Rural | 3.81 | 0.16 | 2.16 | 0.38 | 1.97 | 0.34 | 3.11 | 1.26 | 0.55 |
| Medium city | 3.88 | 0.23 | 2.58 | 0.62 | 2.22 | 0.53 | 3.16 | 1.50 | 1.02 |
| Suburb | 3.80 | 0.21 | 2.54 | 0.55 | 2.08 | 0.52 | 3.23 | 1.50 | 1.09 |
| Large city | 3.94 | 0.23 | 2.70 | 0.62 | 2.20 | 0.57 | 3.10 | 1.47 | 1.19 |
| Student's Feb. 83 job status | | | | | | | | | |
| Full-time job | 3.78 | 0.17 | 2.32 | 0.42 | 1.99 | 0.36 | 3.10 | 1.29 | 0.70 |
| Part-time job | 3.86 | 0.26 | 2.66 | 0.64 | 2.24 | 0.57 | 3.22 | 1.52 | 1.12 |
| Unemployed | 3.81 | 0.10 | 1.97 | 0.22 | 1.67 | 0.20 | 3.07 | 1.28 | 0.54 |
| Not in labor force | 3.95 | 0.24 | 2.69 | 0.70 | 2.30 | 0.61 | 3.16 | 1.54 | 1.16 |

Table 9.--Average Carnegie units earned by public high school graduates in selected parts of the academic curriculum: 1982--Continued

| | English | Advanced or honors english | Mathe-matics | Calculus & advanced mathematics | Science | Chemistry or physics | Social studies | Fine arts | Foreign language |
|---|---|---|---|---|---|---|---|---|---|
| Total vocational units | | | | | | | | | |
| 0.0 units | 4.05 | 0.67 | 3.47 | 1.32 | 3.25 | 1.37 | 3.25 | 2.55 | 2.48 |
| 0.01-1.99 units | 4.13 | 0.42 | 3.34 | 1.15 | 2.99 | 1.11 | 3.33 | 2.05 | 2.03 |
| 2.0-3.99 units | 3.97 | 0.26 | 2.89 | 0.77 | 2.47 | 0.68 | 3.30 | 1.77 | 1.31 |
| 4.0-5.99 units | 3.83 | 0.15 | 2.40 | 0.42 | 1.97 | 0.34 | 3.20 | 1.35 | 0.69 |
| 6.0-7.99 units | 3.72 | 0.09 | 2.04 | 0.23 | 1.68 | 0.17 | 3.02 | 1.08 | 0.36 |
| 8.0 or more units | 3.55 | 0.08 | 1.75 | 0.13 | 1.46 | 0.10 | 2.79 | 0.73 | 0.23 |
| Total specific labor market preparation units | | | | | | | | | |
| 0.0 units | 4.11 | 0.44 | 3.15 | 1.03 | 2.89 | 0.95 | 3.31 | 2.13 | 1.84 |
| 0.01-1.99 units | 4.00 | 0.27 | 2.88 | 0.79 | 2.49 | 0.73 | 3.29 | 1.78 | 1.43 |
| 2.0-3.99 units | 3.85 | 0.16 | 2.47 | 0.49 | 2.07 | 0.41 | 3.17 | 1.40 | 0.82 |
| 4.0-5.99 units | 3.69 | 0.13 | 2.19 | 0.31 | 1.76 | 0.27 | 3.07 | 1.11 | 0.50 |
| 6.0 or more units | 3.57 | 0.08 | 1.87 | 0.17 | 1.51 | 0.12 | 2.83 | 0.75 | 0.21 |

Source: National Center for Education Statistics, High School and Beyond, Sophomore Cohort.

Table 10.--Average Carnegie units earned by female high school graduates in selected parts of the academic curriculum: 1982

| | English | Advanced or honors english | Mathematics | Calculus & advanced mathematics | Science | Chemistry or physics | Social studies | Fine arts | Foreign language |
|---|---|---|---|---|---|---|---|---|---|
| Total | 3.88 | 0.25 | 2.45 | 0.53 | 2.10 | 0.44 | 3.16 | 1.61 | 1.14 |
| Race/ethnicity | | | | | | | | | |
| White | 3.85 | 0.29 | 2.47 | 0.60 | 2.15 | 0.49 | 3.19 | 1.72 | 1.21 |
| Black | 4.09 | 0.12 | 2.49 | 0.36 | 2.01 | 0.31 | 3.07 | 1.21 | 0.78 |
| Hispanic | 3.90 | 0.12 | 2.18 | 0.30 | 1.75 | 0.21 | 3.03 | 1.36 | 0.94 |
| Asian | 3.87 | 0.56 | 3.08 | 0.89 | 2.54 | 0.90 | 3.22 | 1.41 | 2.15 |
| Native American | 3.97 | 0.06 | 2.07 | 0.26 | 2.01 | 0.32 | 3.12 | 1.68 | 0.58 |
| Socioeconomic status | | | | | | | | | |
| Lowest quartile | 3.86 | 0.13 | 2.12 | 0.26 | 1.81 | 0.22 | 3.10 | 1.36 | 0.63 |
| Second quartile | 3.82 | 0.20 | 2.29 | 0.47 | 1.96 | 0.35 | 3.14 | 1.69 | 0.96 |
| Third quartile | 3.91 | 0.26 | 2.55 | 0.60 | 2.20 | 0.50 | 3.18 | 1.69 | 1.29 |
| Highest quartile | 3.94 | 0.44 | 2.94 | 0.89 | 2.50 | 0.77 | 3.24 | 1.78 | 1.80 |
| Urbanicity | | | | | | | | | |
| Urban | 3.96 | 0.26 | 2.58 | 0.51 | 2.11 | 0.45 | 3.13 | 1.44 | 1.28 |
| Suburban | 3.82 | 0.27 | 2.51 | 0.57 | 2.08 | 0.47 | 3.18 | 1.62 | 1.25 |
| Rural | 3.93 | 0.21 | 2.28 | 0.49 | 2.11 | 0.40 | 3.13 | 1.69 | 0.88 |
| High school grades | | | | | | | | | |
| Mostly As | 4.02 | 0.55 | 3.15 | 1.18 | 2.77 | 0.99 | 3.12 | 1.71 | 1.72 |
| Mostly Bs | 3.87 | 0.24 | 2.51 | 0.57 | 2.14 | 0.46 | 3.20 | 1.73 | 1.25 |
| Mostly Cs | 3.80 | 0.13 | 2.07 | 0.20 | 1.76 | 0.17 | 3.13 | 1.46 | 0.77 |
| Mostly below C | 3.95 | 0.05 | 1.88 | 0.09 | 1.56 | 0.08 | 3.12 | 1.18 | 0.54 |

Table 10.--Average Carnegie units earned by female high school graduates in selected parts of the academic curriculum: 1982--Continued

| | English | Advanced or honors english | Mathe-matics | Calculus & advanced mathematics | Science | Chemistry or physics | Social studies | Fine arts | Foreign language |
|---|---|---|---|---|---|---|---|---|---|
| Total vocational units | | | | | | | | | |
| 0.0 units | 4.10 | 0.88 | 3.36 | 1.26 | 3.19 | 1.31 | 3.23 | 2.62 | 2.93 |
| 0.01-1.99 units | 4.13 | 0.50 | 3.23 | 1.09 | 2.91 | 0.99 | 3.35 | 2.17 | 2.26 |
| 2.0-3.99 units | 3.98 | 0.31 | 2.86 | 0.78 | 2.44 | 0.67 | 3.30 | 1.99 | 1.51 |
| 4.0-5.99 units | 3.86 | 0.15 | 2.31 | 0.37 | 1.85 | 0.26 | 3.20 | 1.58 | 0.86 |
| 6.0-7.99 units | 3.79 | 0.12 | 1.96 | 0.21 | 1.63 | 0.14 | 3.01 | 1.20 | 0.50 |
| 8.0 or more units | 3.60 | 0.11 | 1.67 | 0.12 | 1.49 | 0.06 | 2.83 | 0.80 | 0.36 |
| Total specific labor market preparationunits | | | | | | | | | |
| 0.0 units | 4.12 | 0.49 | 3.04 | 0.96 | 2.79 | 0.84 | 3.30 | 2.24 | 1.98 |
| 0.01-1.99 units | 3.99 | 0.30 | 2.75 | 0.72 | 2.39 | 0.64 | 3.28 | 1.87 | 1.48 |
| 2.0-3.99 units | 3.84 | 0.16 | 2.30 | 0.41 | 1.89 | 0.31 | 3.15 | 1.53 | 0.88 |
| 4.0-5.99 units | 3.68 | 0.16 | 2.07 | 0.25 | 1.66 | 0.19 | 3.03 | 1.19 | 0.67 |
| 6.0 or more units | 3.64 | 0.12 | 1.74 | 0.16 | 1.48 | 0.07 | 2.81 | 0.81 | 0.38 |

Table 11.--Average Carnegie units earned by male high school graduates in selected parts of the academic curriculum: 1982

| | English | Advanced or honors english | Mathematics | Calculus & advanced mathematics | Science | Chemistry or physics | Social studies | Fine arts | Foreign language |
|---|---|---|---|---|---|---|---|---|---|
| Total | 3.83 | 0.17 | 2.62 | 0.59 | 2.21 | 0.56 | 3.15 | 1.27 | 0.78 |
| Race/ethnicity | | | | | | | | | |
| White | 3.81 | 0.19 | 2.69 | 0.67 | 2.31 | 0.63 | 3.18 | 1.27 | 0.82 |
| Black | 3.98 | 0.08 | 2.55 | 0.36 | 2.04 | 0.37 | 3.10 | 1.29 | 0.61 |
| Hispanic | 3.82 | 0.12 | 2.28 | 0.32 | 1.81 | 0.24 | 2.97 | 1.25 | 0.61 |
| Asian | 3.77 | 0.27 | 3.16 | 1.05 | 2.58 | 1.05 | 3.12 | 1.21 | 1.64 |
| Native American | 3.89 | 0.10 | 2.08 | 0.30 | 1.91 | 0.55 | 3.25 | 1.69 | 0.39 |
| Socioeconomic status | | | | | | | | | |
| Lowest quartile | 3.87 | 0.09 | 2.26 | 0.31 | 1.94 | 0.28 | 3.09 | 1.24 | 0.46 |
| Second quartile | 3.78 | 0.14 | 2.46 | 0.47 | 2.03 | 0.45 | 3.15 | 1.14 | 0.63 |
| Third quartile | 3.75 | 0.17 | 2.70 | 0.65 | 2.25 | 0.60 | 3.14 | 1.26 | 0.77 |
| Highest quartile | 3.92 | 0.27 | 3.08 | 0.95 | 2.67 | 0.94 | 3.20 | 1.48 | 1.27 |
| Urbanicity | | | | | | | | | |
| Urban | 3.87 | 0.16 | 2.69 | 0.59 | 2.12 | 0.49 | 3.08 | 1.35 | 0.87 |
| Suburban | 3.82 | 0.20 | 2.75 | 0.65 | 2.27 | 0.64 | 3.17 | 1.25 | 0.91 |
| Rural | 3.82 | 0.12 | 2.40 | 0.49 | 2.18 | 0.48 | 3.14 | 1.27 | 0.53 |
| High school grades | | | | | | | | | |
| Mostly As | 3.97 | 0.53 | 3.69 | 1.55 | 3.25 | 1.49 | 3.13 | 1.54 | 1.56 |
| Mostly Bs | 3.83 | 0.19 | 2.85 | 0.77 | 2.40 | 0.72 | 3.17 | 1.33 | 0.94 |
| Mostly Cs | 3.78 | 0.08 | 2.25 | 0.28 | 1.87 | 0.27 | 3.13 | 1.20 | 0.52 |
| Mostly below C | 3.83 | 0.06 | 2.09 | 0.16 | 1.77 | 0.14 | 3.15 | 1.09 | 0.36 |

Source: National Center for Education Statistics, High School and Beyond, Sophomore Cohort.

Table 11.--Average Carnegie units earned by male high school graduates in selected parts of the academic curriculum: 1982--Continued

| | English | Advanced or honors english | Mathematics | Calculus & advanced mathematics | Science | Chemistry or physics | Social studies | Fine arts | Foreign language |
|---|---|---|---|---|---|---|---|---|---|
| Total vocational units | | | | | | | | | |
| 0.0 units | 4.00 | 0.48 | 3.57 | 1.38 | 3.31 | 1.43 | 3.27 | 2.49 | 2.05 |
| 0.01-1.99 units | 4.14 | 0.34 | 3.47 | 1.22 | 3.08 | 1.24 | 3.30 | 1.92 | 1.79 |
| 2.0-3.99 units | 3.96 | 0.20 | 2.93 | 0.76 | 2.49 | 0.69 | 3.29 | 1.52 | 1.10 |
| 4.0-5.99 units | 3.80 | 0.15 | 2.50 | 0.47 | 2.10 | 0.43 | 3.21 | 1.11 | 0.52 |
| 6.0-7.99 units | 3.65 | 0.05 | 2.13 | 0.25 | 1.74 | 0.21 | 3.03 | 0.93 | 0.21 |
| 8.0 or more units | 3.50 | 0.05 | 1.84 | 0.15 | 1.43 | 0.13 | 2.74 | 0.66 | 0.09 |
| Total specific labor market preparation units | | | | | | | | | |
| 0.0 units | 4.08 | 0.36 | 3.34 | 1.16 | 3.07 | 1.13 | 3.32 | 1.95 | 1.62 |
| 0.01-1.99 units | 4.02 | 0.24 | 3.06 | 0.89 | 2.62 | 0.86 | 3.30 | 1.66 | 1.36 |
| 2.0-3.99 units | 3.86 | 0.16 | 2.67 | 0.57 | 2.28 | 0.52 | 3.19 | 1.26 | 0.75 |
| 4.0-5.99 units | 3.70 | 0.10 | 2.30 | 0.37 | 1.84 | 0.35 | 3.10 | 1.04 | 0.33 |
| 6.0 or more units | 3.54 | 0.05 | 1.95 | 0.18 | 1.53 | 0.15 | 2.85 | 0.71 | 0.12 |

Source: National Center for Education Statistics, High School and Beyond, Sophomore Cohort.

Table 1.--Average number of Carnegie units completed by public high school graduates:1987

| | Total* | Academic | Vocational | Personal use/other |
|---|---|---|---|---|
| Total | 22.77 | 15.64 | 4.43 | 2.70 |
| Sex | | | | |
| Male | 22.65 | 15.28 | 4.52 | 2.84 |
| Female | 22.89 | 15.98 | 4.36 | 2.56 |
| Race/ethnicity | | | | |
| White | 22.91 | 15.74 | 4.52 | 2.64 |
| Black | 22.14 | 14.96 | 4.47 | 2.71 |
| Hispanic | 22.54 | 15.07 | 4.27 | 3.20 |
| Asian | 23.88 | 17.76 | 2.92 | 3.21 |
| Native American | 23.15 | 15.33 | 4.70 | 3.13 |
| Urbanicity | | | | |
| Urban | 22.55 | 15.89 | 4.11 | 2.55 |
| Suburban | 22.74 | 15.89 | 3.92 | 2.93 |
| Rural | 22.47 | 15.28 | 4.27 | 2.93 |
| School enrollment | | | | |
| Less than 500 | 23.70 | 15.16 | 5.76 | 2.78 |
| 501 to 1000 | 22.75 | 15.80 | 4.36 | 2.60 |
| 1001 to 2000 | 22.53 | 15.64 | 4.28 | 2.61 |
| 2001 to 3000 | 22.75 | 15.77 | 3.73 | 3.25 |
| 3001 or more | 21.74 | 16.55 | 3.47 | 1.72 |
| High school grades | | | | |
| Mostly As | 24.48 | 18.97 | 2.83 | 2.68 |
| Mostly Bs | 23.42 | 16.43 | 4.22 | 2.78 |
| Mostly Cs | 22.07 | 14.32 | 5.06 | 2.69 |
| Mostly below C | 20.52 | 13.02 | 5.06 | 2.43 |
| Total vocational units | | | | |
| 0.0 units | 23.79 | 20.78 | 0.00 | 3.01 |
| 0.01-1.99 units | 23.08 | 19.28 | 1.07 | 2.73 |
| 2.0-3.99 units | 22.76 | 17.19 | 2.71 | 2.85 |
| 4.0-5.99 units | 22.40 | 14.93 | 4.70 | 2.77 |
| 6.0-7.99 units | 22.51 | 13.21 | 6.68 | 2.62 |
| 8.0 or more units | 23.29 | 11.65 | 9.38 | 2.26 |
| Total specific labor market preparation units | | | | |
| 0.0 units | 22.90 | 18.79 | 1.25 | 2.87 |
| 0.01-1.99 units | 22.86 | 17.61 | 2.47 | 2.78 |
| 2.0-3.99 units | 22.66 | 15.55 | 4.32 | 2.78 |
| 4.0-5.99 units | 22.64 | 13.68 | 6.29 | 2.67 |
| 6.0 or more units | 22.89 | 11.84 | 8.78 | 2.27 |

*Columns may not add to total due to rounding
Source: National Center for Education Statistics, 1987 High School Transcript Study.

Table 2.--Percentage of public high school graduates with different numbers of Carnegie units accumulated in vocational education: 1987

| | 0.00 units | 0.01-0.99 units | 1.00-1.99 units | 2.00-2.99 units | 3.00-3.99 units | 4.00-4.99 units | 5.00-5.99 units | 6.00-6.99 units | 7.00-7.99 units | 8.00 or more units |
|---|---|---|---|---|---|---|---|---|---|---|
| Total | 2.23 | 3.54 | 12.28 | 14.39 | 12.99 | 12.84 | 11.46 | 9.05 | 8.04 | 13.19 |
| Sex | | | | | | | | | | |
| Male | 2.10 | 3.12 | 11.92 | 14.48 | 12.73 | 12.51 | 12.25 | 8.71 | 8.21 | 13.96 |
| Female | 2.35 | 3.92 | 12.62 | 14.30 | 13.17 | 13.16 | 10.72 | 9.36 | 7.89 | 12.52 |
| Race/ethnicity | | | | | | | | | | |
| White | 2.20 | 3.58 | 12.17 | 13.93 | 12.68 | 12.52 | 11.18 | 8.90 | 8.05 | 14.79 |
| Black | 1.31 | 3.35 | 10.90 | 12.62 | 13.16 | 14.45 | 13.56 | 10.19 | 9.77 | 10.68 |
| Hispanic | 2.16 | 2.33 | 11.43 | 15.55 | 14.45 | 13.49 | 13.69 | 10.87 | 7.53 | 8.51 |
| Asian | 6.36 | 5.41 | 20.60 | 24.22 | 15.69 | 10.34 | 6.26 | 4.93 | 2.59 | 3.60 |
| Native American | 1.57 | 1.39 | 5.93 | 14.92 | 14.31 | 15.39 | 15.21 | 9.77 | 10.00 | 11.50 |
| Urbanicity | | | | | | | | | | |
| Urban | 2.51 | 5.19 | 12.77 | 15.55 | 13.56 | 13.29 | 11.69 | 9.48 | 6.84 | 9.11 |
| Suburban | 3.54 | 3.19 | 15.20 | 16.45 | 15.09 | 13.76 | 10.92 | 6.92 | 5.61 | 9.32 |
| Rural | 1.86 | 3.62 | 13.45 | 16.44 | 12.82 | 12.32 | 11.30 | 8.74 | 7.18 | 12.26 |
| School enrollment | | | | | | | | | | |
| Less than 500 | 0.42 | 0.97 | 5.53 | 6.99 | 10.19 | 13.14 | 14.38 | 12.08 | 13.54 | 22.79 |
| 501 to 1000 | 3.27 | 4.35 | 11.18 | 14.82 | 12.17 | 11.99 | 11.53 | 9.54 | 7.93 | 13.22 |
| 1001 to 2000 | 2.26 | 3.34 | 14.21 | 15.39 | 13.06 | 13.24 | 10.87 | 8.29 | 7.10 | 12.24 |
| 2001 to 3000 | 2.04 | 5.40 | 15.12 | 17.32 | 17.44 | 12.53 | 10.17 | 7.53 | 5.81 | 6.63 |
| 3001 or more | 0.75 | 3.23 | 16.94 | 23.97 | 15.41 | 16.63 | 9.93 | 6.26 | 3.59 | 3.29 |

Table 2.--Percentage of public high school graduates with different numbers of Carnegie units accumulated in vocational education: 1987--Continued

| | 0.00 units | 0.01-0.99 units | 1.00-1.99 units | 2.00-2.99 units | 3.00-3.99 units | 4.00-4.99 units | 5.00-5.99 units | 6.00-6.99 units | 7.00-7.99 units | 8.00 or more units |
|---|---|---|---|---|---|---|---|---|---|---|
| High school grades | | | | | | | | | | |
| Mostly As | 5.99 | 9.53 | 23.71 | 20.01 | 12.89 | 9.43 | 6.35 | 3.90 | 4.14 | 4.05 |
| Mostly Bs | 2.60 | 3.76 | 14.06 | 16.06 | 13.25 | 12.38 | 10.45 | 7.56 | 7.31 | 12.57 |
| Mostly Cs | 0.98 | 1.59 | 7.76 | 11.61 | 12.99 | 14.01 | 13.40 | 11.31 | 9.36 | 17.00 |
| Mostly below C | 0.47 | 2.12 | 6.87 | 10.42 | 12.01 | 14.79 | 14.95 | 13.53 | 11.07 | 13.77 |

Source: National Center for Education Statistics, 1987 High School Transcript Study.

Table 3.--Percentage of public high school graduates who participated in different types of vocational education: 1987

| | Consumer and homemaking | General labor market preparation | | | Specific labor market preparation |
|---|---|---|---|---|---|
| | | Industrial arts | Career education | Total | |
| Total | 47.12 | 12.44 | 14.18 | 78.51 | 88.50 |
| Sex | | | | | |
| Male | 34.47 | 21.97 | 14.22 | 73.87 | 91.32 |
| Female | 59.01 | 3.57 | 13.94 | 82.85 | 85.83 |
| Race/ethnicity | | | | | |
| White | 46.16 | 13.39 | 12.03 | 79.38 | 88.23 |
| Black | 53.61 | 12.34 | 18.67 | 77.71 | 88.34 |
| Hispanic | 51.24 | 10.42 | 24.44 | 76.45 | 89.06 |
| Asian | 36.57 | 3.50 | 14.70 | 69.70 | 82.84 |
| Native American | 51.14 | 14.82 | 6.57 | 77.97 | 92.22 |
| Urbanicity | | | | | |
| Urban | 38.96 | 9.45 | 24.86 | 75.92 | 86.95 |
| Suburban | 48.73 | 9.11 | 13.14 | 74.55 | 86.46 |
| Rural | 44.98 | 11.05 | 14.57 | 77.91 | 88.32 |
| School enrollment | | | | | |
| Less than 500 | 61.98 | 26.51 | 15.25 | 89.71 | 91.61 |
| 501 to 1000 | 43.35 | 10.33 | 12.73 | 77.10 | 87.22 |
| 1001 to 2000 | 46.17 | 10.90 | 13.54 | 77.42 | 88.59 |
| 2001 to 3000 | 44.58 | 6.77 | 15.63 | 71.82 | 87.29 |
| 3001 or more | 22.47 | 10.58 | 39.58 | 86.85 | 90.65 |
| High school grades | | | | | |
| Mostly As | 32.48 | 4.83 | 8.47 | 72.48 | 77.83 |
| Mostly Bs | 44.40 | 10.92 | 13.06 | 79.61 | 87.43 |
| Mostly Cs | 53.57 | 14.95 | 16.23 | 80.11 | 91.92 |
| Mostly below C | 53.77 | 19.11 | 18.33 | 75.83 | 93.90 |
| Total vocational units | | | | | |
| 0.0 units | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.01-1.99 units | 22.19 | 3.62 | 8.18 | 64.30 | 58.79 |
| 2.0-3.9 9units | 44.21 | 8.33 | 12.33 | 79.43 | 92.20 |
| 4.0-5.99 units | 56.51 | 14.98 | 16.18 | 84.43 | 98.07 |
| 6.0-7.99 units | 59.80 | 16.41 | 18.33 | 85.70 | 99.42 |
| 8.0 or more units | 57.29 | 23.86 | 18.53 | 86.69 | 99.66 |
| Total specific labor market preparation units | | | | | |
| 0.0 units | 38.16 | 7.10 | 10.49 | 71.35 | 0.00 |
| 0.01-1.99 units | 47.34 | 9.04 | 15.42 | 77.80 | 100.00 |
| 2.0-3.99 units | 51.70 | 13.06 | 15.30 | 81.76 | 100.00 |
| 4.0-5.99 units | 51.43 | 14.57 | 13.78 | 81.64 | 100.00 |
| 6.0 or more units | 39.31 | 19.54 | 12.93 | 75.25 | 100.00 |

Source: National Center for Education Statistics, 1987 High School Transcript Study.

Table 4.--Average number of vocational education Carnegie units completed by public high school graduates: 1987

| | Consumer and homemaking | General labor market preparation | | | Specific labor market preparation |
|---|---|---|---|---|---|
| | | Industrial arts | Career education | Total | |
| Total | 0.60 | 0.14 | 0.14 | 0.93 | 2.90 |
| Sex | | | | | |
| Male | 0.33 | 0.25 | 0.14 | 0.90 | 3.29 |
| Female | 0.86 | 0.03 | 0.14 | 0.95 | 2.55 |
| Race/ethnicity | | | | | |
| White | 0.60 | 0.15 | 0.12 | 0.94 | 2.99 |
| Black | 0.73 | 0.13 | 0.20 | 0.98 | 2.77 |
| Hispanic | 0.60 | 0.11 | 0.25 | 0.97 | 2.70 |
| Asian | 0.34 | 0.04 | 0.11 | 0.69 | 1.88 |
| Native American | 0.64 | 0.17 | 0.05 | 0.87 | 3.19 |
| Urbanicity | | | | | |
| Urban | 0.44 | 0.10 | 0.26 | 0.93 | 2.74 |
| Suburban | 0.56 | 0.10 | 0.10 | 0.77 | 2.59 |
| Rural | 0.57 | 0.12 | 0.18 | 0.93 | 2.77 |
| School enrollment | | | | | |
| Less than 500 | 0.95 | 0.33 | 0.21 | 1.36 | 3.45 |
| 501 to 1000 | 0.56 | 0.11 | 0.12 | 0.87 | 2.92 |
| 1001 to 2000 | 0.56 | 0.11 | 0.12 | 0.88 | 2.84 |
| 2001 to 3000 | 0.47 | 0.07 | 0.17 | 0.73 | 2.52 |
| 3001 or more | 0.19 | 0.10 | 0.22 | 0.95 | 2.33 |
| High school grades | | | | | |
| Mostly As | 0.37 | 0.05 | 0.08 | 0.73 | 1.73 |
| Mostly Bs | 0.56 | 0.13 | 0.13 | 0.93 | 2.73 |
| Mostly Cs | 0.71 | 0.16 | 0.16 | 1.00 | 3.36 |
| Mostly below C | 0.68 | 0.19 | 0.19 | 0.93 | 3.46 |
| Total vocational units | | | | | |
| 0.0 units | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.01-1.99 units | 0.14 | 0.02 | 0.04 | 0.45 | 0.48 |
| 2.0-3.99 units | 0.43 | 0.07 | 0.08 | 0.75 | 1.52 |
| 4.0-5.99 units | 0.74 | 0.16 | 0.15 | 1.02 | 2.94 |
| 6.0-7.99 units | 0.90 | 0.18 | 0.22 | 1.20 | 4.58 |
| 8.0 or more units | 0.96 | 0.31 | 0.28 | 1.49 | 6.94 |
| Total specific labor market preparationunits | | | | | |
| 0.0 units | 0.48 | 0.07 | 0.15 | 0.77 | 0.00 |
| 0.01-1.99 units | 0.63 | 0.10 | 0.14 | 0.83 | 1.01 |
| 2.0-3.99 units | 0.68 | 0.15 | 0.15 | 1.00 | 2.64 |
| 4.0-5.99 units | 0.65 | 0.16 | 0.13 | 1.02 | 4.61 |
| 6.0 or more units | 0.44 | 0.20 | 0.11 | 0.97 | 7.38 |

Source: National Center for Education Statistics, 1987 High School Transcript Study.

Table 5.--Percentage of public high school graduates with different numbers of Carnegie units accumulated in specific labor market vocational education: 1987

| | 0.00 units | 0.01-0.99 units | 1.00-1.99 units | 2.00-2.99 units | 3.00-3.99 units | 4.00 or more units |
|---|---|---|---|---|---|---|
| Total | 11.50 | 7.56 | 20.16 | 16.08 | 13.15 | 31.55 |
| Sex | | | | | | |
| Male | 8.68 | 6.42 | 18.06 | 16.15 | 13.76 | 36.93 |
| Female | 14.17 | 8.65 | 22.10 | 16.00 | 12.54 | 26.54 |
| Race/ethnicity | | | | | | |
| White | 11.77 | 7.01 | 19.45 | 15.96 | 13.05 | 32.76 |
| Black | 11.66 | 8.42 | 19.34 | 15.26 | 14.76 | 30.57 |
| Hispanic | 10.94 | 7.00 | 21.17 | 18.54 | 12.99 | 29.36 |
| Asian | 17.16 | 11.28 | 25.76 | 24.09 | 9.02 | 12.70 |
| Native American | 7.78 | 3.12 | 20.53 | 17.33 | 13.75 | 37.49 |
| Urbanicity | | | | | | |
| Urban | 13.05 | 8.09 | 20.00 | 16.08 | 13.52 | 29.26 |
| Suburban | 13.54 | 8.29 | 21.72 | 16.91 | 13.29 | 26.25 |
| Rural | 11.68 | 9.25 | 21.30 | 16.86 | 11.98 | 28.94 |
| School enrollment | | | | | | |
| Less than 500 | 8.39 | 3.19 | 16.82 | 16.21 | 15.97 | 39.43 |
| 501 to 1000 | 12.78 | 7.19 | 18.87 | 16.24 | 11.93 | 32.99 |
| 1001 to 2000 | 11.41 | 8.62 | 21.30 | 15.39 | 13.12 | 30.16 |
| 2001 to 3000 | 12.71 | 9.31 | 22.13 | 17.76 | 12.60 | 25.49 |
| 3001 or more | 9.35 | 10.72 | 26.40 | 18.72 | 14.53 | 20.28 |
| High school grades | | | | | | |
| Mostly As | 22.17 | 13.07 | 25.55 | 16.63 | 10.07 | 12.50 |
| Mostly Bs | 12.57 | 8.01 | 21.92 | 16.61 | 12.16 | 28.73 |
| Mostly Cs | 8.08 | 5.56 | 16.79 | 15.97 | 15.06 | 38.54 |
| Mostly below C | 6.10 | 6.00 | 18.01 | 13.76 | 14.36 | 41.78 |

Source: National Center for Education Statistics, 1987 High School Transcript Study.

Table 6.--Percentage of public high school graduates participating in specific labor market preparation vocational education, by program area: 1987

| | Agriculture | Business | Marketing and distribution | Health | Occupat-ional home econmics | Trade and Industry | | | | Technical/ commun-ications |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | All programs | Construct-ion | Precision product-ion | Other | |
| Total | 8.02 | 53.81 | 8.73 | 4.91 | 10.57 | 37.54 | 5.04 | 32.44 | 10.93 | 24.72 |
| Sex | | | | | | | | | | |
| Male | 12.52 | 42.45 | 7.38 | 2.74 | 5.21 | 61.28 | 9.93 | 52.32 | 20.64 | 28.20 |
| Female | 3.81 | 64.56 | 9.94 | 6.92 | 15.58 | 15.23 | 0.47 | 13.80 | 1.76 | 21.37 |
| Race/ethnicity | | | | | | | | | | |
| White | 9.36 | 53.47 | 8.12 | 4.50 | 10.23 | 37.25 | 4.78 | 32.76 | 10.57 | 26.75 |
| Black | 5.83 | 54.23 | 9.59 | 6.09 | 12.43 | 33.73 | 5.59 | 26.58 | 8.31 | 16.85 |
| Hispanic | 4.05 | 53.33 | 9.57 | 7.00 | 10.90 | 44.63 | 5.66 | 38.67 | 14.07 | 14.51 |
| Asian | 0.37 | 46.12 | 8.09 | 9.50 | 4.49 | 30.70 | 0.82 | 24.79 | 9.19 | 29.77 |
| Native American | 10.47 | 64.66 | 3.97 | 7.72 | 7.15 | 50.86 | 11.79 | 44.68 | 10.82 | 20.16 |
| Urbanicity | | | | | | | | | | |
| Urban | 3.34 | 51.37 | 10.22 | 5.90 | 10.15 | 40.52 | 4.73 | 35.53 | 10.20 | 19.08 |
| Suburban | 2.22 | 53.30 | 9.29 | 3.49 | 10.22 | 36.82 | 3.24 | 32.29 | 11.44 | 28.41 |
| Rural | 5.99 | 52.82 | 11.86 | 5.70 | 9.80 | 35.94 | 5.00 | 30.25 | 10.67 | 23.09 |
| School enrollment | | | | | | | | | | |
| Less than 500 | 20.39 | 63.07 | 4.27 | 3.30 | 11.77 | 36.90 | 5.76 | 31.82 | 8.57 | 24.71 |
| 501 to 1000 | 9.00 | 52.86 | 7.52 | 5.95 | 8.87 | 37.08 | 5.00 | 32.51 | 11.52 | 26.18 |
| 1001 to 2000 | 4.93 | 52.42 | 10.30 | 4.52 | 11.52 | 37.14 | 5.09 | 31.85 | 10.91 | 23.92 |
| 2001 to 3000 | 2.78 | 49.44 | 10.78 | 5.48 | 9.81 | 40.07 | 4.47 | 34.50 | 12.13 | 25.20 |
| 3001 or more | 6.65 | 61.39 | 10.95 | 7.91 | 8.87 | 42.99 | 2.14 | 37.67 | 13.13 | 16.78 |

Table 6.--Percentage of public high school graduates participating in specific labor market preparation vocational education, by program area: 1987--Continued

| | Agriculture | Business | Marketing and distribution | Health | Occupat-ional home econmics | Trade and Industry | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | All programs | Construct-ion | Precision product-ion | Other | Technical/ commun-ications |
| High school grades | | | | | | | | | | |
| Mostly As | 4.74 | 46.96 | 2.60 | 3.68 | 4.43 | 20.49 | 1.02 | 17.89 | 4.15 | 37.47 |
| Mostly Bs | 7.18 | 54.41 | 7.80 | 4.77 | 9.68 | 32.76 | 3.37 | 28.50 | 8.10 | 28.13 |
| Mostly Cs | 10.17 | 56.49 | 10.79 | 5.55 | 12.75 | 43.93 | 6.82 | 38.08 | 13.85 | 19.16 |
| Mostly below C | 8.05 | 50.50 | 12.84 | 4.82 | 14.06 | 55.38 | 10.53 | 46.47 | 20.41 | 14.64 |
| Total vocational units | | | | | | | | | | |
| 0.0 units | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.01-1.99 units | 1.06 | 24.03 | 1.32 | 4.71 | 1.90 | 15.84 | 0.59 | 12.07 | 3.76 | 22.06 |
| 2.0-3.99 units | 3.78 | 53.24 | 5.01 | 4.05 | 6.10 | 32.95 | 1.87 | 28.99 | 6.45 | 31.77 |
| 4.0-5.99 units | 7.57 | 66.01 | 11.66 | 5.23 | 11.78 | 43.29 | 4.58 | 38.19 | 11.37 | 26.82 |
| 6.0-7.99 units | 12.52 | 65.76 | 14.76 | 6.07 | 16.97 | 49.12 | 9.82 | 42.47 | 17.50 | 21.64 |
| 8.0 or more units | 21.49 | 61.82 | 13.63 | 5.70 | 21.50 | 53.84 | 12.49 | 45.94 | 21.34 | 17.58 |
| Total specific labor market preparation units | | | | | | | | | | |
| 0.0 units | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.01-1.99 units | 2.38 | 53.03 | 3.45 | 4.86 | 7.53 | 25.00 | 1.24 | 20.51 | 4.65 | 30.88 |
| 2.0-3.99 units | 6.92 | 67.12 | 10.50 | 6.06 | 11.32 | 42.59 | 3.53 | 37.62 | 9.55 | 30.18 |
| 4.0-5.99 units | 12.57 | 68.55 | 15.73 | 5.93 | 16.17 | 52.30 | 8.47 | 46.86 | 16.71 | 26.66 |
| 6.0 or more units | 22.16 | 53.57 | 13.96 | 5.39 | 16.67 | 63.91 | 15.45 | 53.69 | 27.75 | 19.17 |

Source: National Center for Education Statistics, 1987 High School Transcript Study.

Table 7.--Carnegie units accumulated by public high school graduates participating in specific labor market preparation vocational education, by program area: 1987

| | *Agriculture* | *Business* | *Marketing* and distribution | *Health* | *Occupat-* ional home econmics | Trade and Industry | | | | Technical/ commun- ications |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | *All* programs | *Construct-* ion | *Precision* product- ion | *Other* | |
| Total | 0.19 | 0.97 | 0.16 | 0.07 | 0.19 | 0.96 | 0.11 | 0.63 | 0.22 | 0.24 |
| Sex | | | | | | | | | | |
| Male | 0.32 | 0.57 | 0.13 | 0.02 | 0.08 | 1.74 | 0.21 | 1.09 | 0.43 | 0.29 |
| Female | 0.07 | 1.35 | 0.19 | 0.12 | 0.29 | 0.23 | 0.01 | 0.20 | 0.02 | 0.18 |
| Race/ethnicity | | | | | | | | | | |
| White | 0.24 | 0.98 | 0.15 | 0.07 | 0.18 | 1.01 | 0.11 | 0.67 | 0.23 | 0.26 |
| Black | 0.09 | 0.99 | 0.17 | 0.12 | 0.26 | 0.75 | 0.12 | 0.45 | 0.18 | 0.16 |
| Hispanic | 0.06 | 0.98 | 0.16 | 0.08 | 0.17 | 0.97 | 0.09 | 0.63 | 0.25 | 0.13 |
| Asian | 0.01 | 0.65 | 0.16 | 0.11 | 0.08 | 0.44 | 0.01 | 0.34 | 0.09 | 0.31 |
| Native American | 0.19 | 1.09 | 0.08 | 0.09 | 0.09 | 1.30 | 0.23 | 0.81 | 0.27 | 0.21 |
| Urbanicity | | | | | | | | | | |
| Urban | 0.05 | 0.96 | 0.19 | 0.10 | 0.19 | 0.92 | 0.07 | 0.64 | 0.20 | 0.18 |
| Suburban | 0.04 | 0.88 | 0.15 | 0.06 | 0.19 | 0.84 | 0.06 | 0.58 | 0.20 | 0.28 |
| Rural | 0.14 | 0.89 | 0.24 | 0.09 | 0.18 | 0.88 | 0.11 | 0.56 | 0.21 | 0.21 |
| School enrollment | | | | | | | | | | |
| Less than 500 | 0.60 | 1.24 | 0.08 | 0.07 | 0.16 | 1.01 | 0.13 | 0.66 | 0.23 | 0.24 |
| 501 to 1000 | 0.20 | 0.94 | 0.15 | 0.07 | 0.15 | 1.01 | 0.10 | 0.68 | 0.23 | 0.26 |
| 1001 to 2000 | 0.10 | 0.93 | 0.19 | 0.07 | 0.23 | 0.94 | 0.12 | 0.61 | 0.21 | 0.23 |
| 2001 to 3000 | 0.05 | 0.84 | 0.18 | 0.08 | 0.16 | 0.87 | 0.06 | 0.58 | 0.23 | 0.22 |
| 3001 or more | 0.06 | 0.97 | 0.09 | 0.12 | 0.13 | 0.69 | 0.02 | 0.53 | 0.13 | 0.13 |

Table 7.--Carnegie units accumulated by public high school graduates participating in specific labor market preparation vocational education, by program area: 1987--Continued

| | Agriculture | Business | Marketing and distribution | Health | Occupat-ional home econmics | Trade and Industry | | | | Technical/ commun-ications |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | All programs | Construct-ion | Precision product-ion | Other | |
| High school grades | | | | | | | | | | |
| Mostly As | 0.12 | 0.76 | 0.04 | 0.04 | 0.05 | 0.33 | 0.01 | 0.27 | 0.05 | 0.36 |
| Mostly Bs | 0.18 | 1.03 | 0.14 | 0.07 | 0.18 | 0.77 | 0.08 | 0.55 | 0.15 | 0.27 |
| Mostly Cs | 0.24 | 1.01 | 0.21 | 0.09 | 0.24 | 1.22 | 0.15 | 0.76 | 0.30 | 0.18 |
| Mostly below C | 0.17 | 0.84 | 0.23 | 0.06 | 0.24 | 1.58 | 0.20 | 0.96 | 0.43 | 0.15 |
| Total vocational units | | | | | | | | | | |
| 0.0 units | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.01-1.99 units | 0.01 | 0.17 | 0.01 | 0.02 | 0.01 | 0.12 | 0.00 | 0.09 | 0.02 | 0.14 |
| 2.0-3.99 units | 0.04 | 0.59 | 0.05 | 0.03 | 0.06 | 0.42 | 0.02 | 0.34 | 0.06 | 0.29 |
| 4.0-5.99 units | 0.13 | 1.09 | 0.19 | 0.08 | 0.15 | 0.92 | 0.07 | 0.69 | 0.16 | 0.27 |
| 6.0-7.99 units | 0.31 | 1.51 | 0.30 | 0.12 | 0.32 | 1.59 | 0.21 | 0.98 | 0.40 | 0.23 |
| 8.0 or more units | 0.74 | 1.94 | 0.35 | 0.16 | 0.63 | 2.52 | 0.39 | 1.42 | 0.71 | 0.24 |
| Total specific labor market preparation units | | | | | | | | | | |
| 0.0 units | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.01-1.99 units | 0.02 | 0.45 | 0.03 | 0.02 | 0.05 | 0.20 | 0.01 | 0.17 | 0.03 | 0.22 |
| 2.0-3.99 units | 0.10 | 1.09 | 0.15 | 0.08 | 0.14 | 0.70 | 0.04 | 0.55 | 0.11 | 0.30 |
| 4.0-5.99 units | 0.31 | 1.64 | 0.33 | 0.10 | 0.29 | 1.44 | 0.14 | 1.00 | 0.29 | 0.29 |
| 6.0 or more units | 0.75 | 1.68 | 0.38 | 0.17 | 0.61 | 3.15 | 0.48 | 1.75 | 0.92 | 0.28 |

Source: National Center for Education Statistics, 1987 High School Transcript Study.

Table 8.--Average Carnegie units earned by public high school graduates in selected parts of the academic curriculum: 1987

| | English | Advanced or honors english | Mathematics | Calculus & advanced mathematics | Science | Chemistry or physics | Social studies | Fine arts | Foreign language |
|---|---|---|---|---|---|---|---|---|---|
| Total | 4.01 | 0.41 | 3.02 | 0.73 | 2.51 | 0.67 | 3.31 | 1.42 | 1.36 |
| Sex | | | | | | | | | |
| Male | 3.98 | 0.33 | 3.07 | 0.73 | 2.54 | 0.72 | 3.30 | 1.24 | 1.16 |
| Female | 4.03 | 0.49 | 2.97 | 0.73 | 2.49 | 0.63 | 3.33 | 1.60 | 1.55 |
| Race/ethnicity | | | | | | | | | |
| White | 4.01 | 0.44 | 3.03 | 0.80 | 2.58 | 0.72 | 3.29 | 1.49 | 1.35 |
| Black | 4.09 | 0.25 | 2.96 | 0.46 | 2.31 | 0.42 | 3.32 | 1.19 | 1.09 |
| Hispanic | 3.97 | 0.28 | 2.87 | 0.39 | 2.21 | 0.39 | 3.20 | 1.32 | 1.50 |
| Asian | 3.85 | 0.86 | 3.72 | 1.21 | 3.02 | 1.26 | 3.50 | 1.18 | 2.49 |
| Native American | 4.20 | 0.24 | 3.06 | 0.42 | 2.44 | 0.41 | 3.19 | 1.69 | 0.75 |
| Urbanicity | | | | | | | | | |
| Urban | 3.99 | 0.37 | 2.98 | 0.60 | 2.43 | 0.57 | 3.48 | 1.43 | 1.58 |
| Suburban | 3.97 | 0.56 | 3.11 | 0.80 | 2.51 | 0.77 | 3.37 | 1.38 | 1.55 |
| Rural | 3.95 | 0.44 | 2.97 | 0.73 | 2.36 | 0.59 | 3.22 | 1.46 | 1.32 |
| School enrollment | | | | | | | | | |
| Less than 500 | 4.12 | 0.14 | 2.87 | 0.58 | 2.53 | 0.55 | 3.28 | 1.67 | 0.69 |
| 501 to 1000 | 3.97 | 0.53 | 3.06 | 0.83 | 2.54 | 0.74 | 3.32 | 1.51 | 1.40 |
| 1001 to 2000 | 3.99 | 0.41 | 3.03 | 0.73 | 2.51 | 0.68 | 3.32 | 1.32 | 1.46 |
| 2001 to 3000 | 4.02 | 0.48 | 3.09 | 0.72 | 2.44 | 0.66 | 3.30 | 1.32 | 1.61 |
| 3001 or more | 4.11 | 0.37 | 2.86 | 0.33 | 2.45 | 0.50 | 3.58 | 1.53 | 2.02 |

Table 8.--Average Carnegie units earned by public high school graduates in selected parts of the academic curriculum: 1987--Continued

| | English | Advanced or honors english | Mathematics | Calculus & advanced mathematics | Science | Chemistry or physics | Social studies | Fine arts | Foreign language |
|---|---|---|---|---|---|---|---|---|---|
| High school grades | | | | | | | | | |
| Mostly As | 4.16 | 1.16 | 3.80 | 1.68 | 3.40 | 1.55 | 3.49 | 1.77 | 2.35 |
| Mostly Bs | 4.04 | 0.52 | 3.22 | 0.93 | 2.68 | 0.82 | 3.34 | 1.54 | 1.61 |
| Mostly Cs | 3.96 | 0.14 | 2.71 | 0.34 | 2.17 | 0.34 | 3.25 | 1.27 | 0.94 |
| Mostly below C | 3.85 | 0.04 | 2.34 | 0.12 | 1.92 | 0.18 | 3.21 | 1.08 | 0.62 |
| Total vocational units | | | | | | | | | |
| 0.0 units | 4.26 | 1.48 | 3.71 | 1.53 | 3.25 | 1.42 | 3.92 | 2.82 | 2.83 |
| 0.01-1.99 units | 4.17 | 0.90 | 3.61 | 1.28 | 3.20 | 1.27 | 3.61 | 2.19 | 2.50 |
| 2.0-3.99 units | 4.09 | 0.52 | 3.36 | 0.99 | 2.86 | 0.95 | 3.46 | 1.62 | 1.81 |
| 4.0-5.99 units | 3.99 | 0.25 | 2.97 | 0.60 | 2.36 | 0.51 | 3.27 | 1.27 | 1.07 |
| 6.0-7.99units | 3.91 | 0.13 | 2.53 | 0.32 | 2.01 | 0.24 | 3.11 | 1.04 | 0.61 |
| 8.0 or more units | 3.76 | 0.10 | 2.23 | 0.16 | 1.76 | 0.11 | 2.90 | 0.66 | 0.34 |
| Total specific labor market preparation units | | | | | | | | | |
| 0.0 units | 4.21 | 0.84 | 3.44 | 1.13 | 3.03 | 1.07 | 3.62 | 2.30 | 2.19 |
| 0.01-1.99 units | 4.12 | 0.60 | 3.38 | 1.00 | 2.91 | 0.98 | 3.50 | 1.77 | 1.93 |
| 2.0-3.99 units | 4.00 | 0.35 | 3.06 | 0.73 | 2.54 | 0.68 | 3.30 | 1.35 | 1.30 |
| 4.0-5.99 units | 3.92 | 0.20 | 2.68 | 0.43 | 2.09 | 0.35 | 3.14 | 1.04 | 0.80 |
| 6.0 or more units | 3.76 | 0.10 | 2.32 | 0.22 | 1.78 | 0.14 | 2.93 | 0.66 | 0.39 |

Source: National Center for Education Statistics, 1987 High School Transcript Study.

Table 9.--Average Carnegie units earned by female high school graduates in selected parts of the academic curriculum: 1987

| | English | Advanced or honors english | Mathematics | Calculus & advanced mathematics | Science | Chemistry or physics | Social studies | Fine arts | Foreign language |
|---|---|---|---|---|---|---|---|---|---|
| Total | 4.03 | 0.49 | 2.97 | 0.73 | 2.49 | 0.63 | 3.33 | 1.60 | 1.55 |
| Race/ethnicity | | | | | | | | | |
| White | 4.05 | 0.52 | 2.98 | 0.80 | 2.54 | 0.67 | 3.31 | 1.72 | 1.55 |
| Black | 4.08 | 0.30 | 2.94 | 0.51 | 2.34 | 0.43 | 3.28 | 1.19 | 1.21 |
| Hispanic | 4.00 | 0.34 | 2.80 | 0.37 | 2.22 | 0.39 | 3.23 | 1.34 | 1.66 |
| Asian | 3.80 | 0.89 | 3.60 | 1.07 | 2.82 | 1.06 | 3.49 | 1.33 | 2.68 |
| Native American | 4.27 | 0.33 | 3.12 | 0.47 | 2.44 | 0.37 | 3.25 | 1.76 | 0.77 |
| Urbanicity | | | | | | | | | |
| Urban | 3.99 | 0.43 | 2.93 | 0.61 | 2.42 | 0.53 | 3.51 | 1.45 | 1.76 |
| Suburban | 3.98 | 0.66 | 3.04 | 0.77 | 2.47 | 0.71 | 3.38 | 1.59 | 1.72 |
| Rural | 3.97 | 0.49 | 2.91 | 0.71 | 2.28 | 0.52 | 3.24 | 1.60 | 1.46 |
| School enrollment | | | | | | | | | |
| Less than 500 | 4.18 | 0.18 | 2.82 | 0.60 | 2.52 | 0.51 | 3.32 | 1.88 | 0.83 |
| 501 to 1000 | 4.00 | 0.63 | 3.00 | 0.81 | 2.52 | 0.69 | 3.33 | 1.78 | 1.58 |
| 1001 to 2000 | 4.01 | 0.48 | 2.99 | 0.73 | 2.48 | 0.65 | 3.33 | 1.46 | 1.66 |
| 2001 to 3000 | 4.03 | 0.55 | 3.04 | 0.69 | 2.42 | 0.57 | 3.35 | 1.41 | 1.81 |
| 3001 or more | 4.12 | 0.48 | 2.77 | 0.33 | 2.44 | 0.50 | 3.61 | 1.61 | 2.09 |

Table 9.--Average Carnegie units earned by female high school graduates in selected parts of the academic curriculum: 1987--Continued

| | English | Advanced or honors english | Mathe-matics | Calculus & advanced mathematics | Science | Chemistry or physics | Social studies | Fine arts | Foreign language |
|---|---|---|---|---|---|---|---|---|---|
| High school grades | | | | | | | | | |
| Mostly As | 4.16 | 1.17 | 3.65 | 1.59 | 3.26 | 1.37 | 3.50 | 1.95 | 2.38 |
| Mostly Bs | 4.05 | 0.58 | 3.12 | 0.86 | 2.59 | 0.71 | 3.36 | 1.68 | 1.73 |
| Mostly Cs | 3.98 | 0.14 | 2.61 | 0.29 | 2.11 | 0.27 | 3.25 | 1.42 | 1.07 |
| Mostly below C | 3.86 | 0.05 | 2.30 | 0.08 | 1.92 | 0.15 | 3.19 | 1.15 | 0.78 |
| Total vocational units | | | | | | | | | |
| 0.0 units | 4.29 | 1.68 | 3.66 | 1.59 | 3.21 | 1.40 | 3.92 | 2.73 | 3.12 |
| 0.01-1.99 units | 4.18 | 1.06 | 3.57 | 1.32 | 3.16 | 1.24 | 3.60 | 2.41 | 2.74 |
| 2.0-3.999 units | 4.13 | 0.56 | 3.31 | 0.96 | 2.83 | 0.88 | 3.46 | 1.83 | 1.97 |
| 4.0-5.99 units | 4.02 | 0.30 | 2.90 | 0.55 | 2.30 | 0.42 | 3.28 | 1.43 | 1.21 |
| 6.0-7.99 units | 3.90 | 0.18 | 2.46 | 0.33 | 2.00 | 0.21 | 3.14 | 1.18 | 0.77 |
| 8.0 or more units | 3.77 | 0.16 | 2.19 | 0.16 | 1.75 | 0.11 | 2.96 | 0.72 | 0.50 |
| Total specific labor market preparation units | | | | | | | | | |
| 0.0 units | 4.18 | 0.91 | 3.40 | 1.15 | 2.98 | 1.03 | 3.61 | 2.35 | 2.35 |
| 0.01-1.99 units | 4.14 | 0.64 | 3.28 | 0.95 | 2.81 | 0.88 | 3.47 | 1.89 | 2.00 |
| 2.0-3.99 units | 4.02 | 0.39 | 2.93 | 0.65 | 2.44 | 0.55 | 3.29 | 1.49 | 1.36 |
| 4.0-5.99 units | 3.90 | 0.23 | 2.56 | 0.38 | 1.99 | 0.26 | 3.15 | 1.12 | 0.95 |
| 6.0 or more units | 3.74 | 0.17 | 2.27 | 0.24 | 1.75 | 0.11 | 2.97 | 0.75 | 0.58 |

Source: National Center for Education Statistics, 1987 High School Transcript Study.

Table 10.--Average Carnegie units earned by male high school graduates in selected parts of the academic curriculum: 1987

| | English | Advanced or honors english | Mathe-matics | Calculus& advanced mathematics | Science | Chemistry or physics | Social studies | Fine arts | Foreign language |
|---|---|---|---|---|---|---|---|---|---|
| Total | 3.98 | 0.33 | 3.07 | 0.73 | 2.54 | 0.72 | 3.30 | 1.24 | 1.16 |
| Race/ethnicity | | | | | | | | | |
| White | 3.98 | 0.35 | 3.08 | 0.80 | 2.61 | 0.78 | 3.26 | 1.24 | 1.14 |
| Black | 4.11 | 0.19 | 2.98 | 0.41 | 2.28 | 0.40 | 3.37 | 1.19 | 0.95 |
| Hispanic | 3.93 | 0.21 | 2.94 | 0.40 | 2.19 | 0.38 | 3.17 | 1.31 | 1.33 |
| Asian | 3.91 | 0.81 | 3.87 | 1.39 | 3.27 | 1.51 | 3.51 | 0.99 | 2.27 |
| Native American | 4.14 | 0.14 | 3.00 | 0.37 | 2.43 | 0.46 | 3.13 | 1.60 | 0.72 |
| Urbanicity | | | | | | | | | |
| Urban | 4.00 | 0.31 | 3.03 | 0.58 | 2.44 | 0.62 | 3.45 | 1.40 | 1.38 |
| Suburban | 3.97 | 0.45 | 3.18 | 0.84 | 2.55 | 0.84 | 3.36 | 1.14 | 1.36 |
| Rural | 3.93 | 0.40 | 3.03 | 0.75 | 2.43 | 0.66 | 3.21 | 1.33 | 1.17 |
| School enrollment | | | | | | | | | |
| Less than 500 | 4.07 | 0.10 | 2.92 | 0.57 | 2.55 | 0.59 | 3.23 | 1.47 | 0.57 |
| 501 to 1000 | 3.94 | 0.42 | 3.11 | 0.85 | 2.56 | 0.79 | 3.31 | 1.22 | 1.22 |
| 1001 to 2000 | 3.97 | 0.33 | 3.08 | 0.72 | 2.54 | 0.72 | 3.31 | 1.17 | 1.25 |
| 2001 to 3000 | 4.01 | 0.41 | 3.12 | 0.74 | 2.47 | 0.75 | 3.26 | 1.22 | 1.40 |
| 3001 or more | 4.10 | 0.25 | 2.97 | 0.34 | 2.45 | 0.49 | 3.55 | 1.44 | 1.94 |

Table 10.--Average Carnegie units earned by male high school graduates in selected parts of the academic curriculum: 1987--Continued

| | English | Advanced or honors english | Mathematics | Calculus & advanced mathematics | Science | Chemistry or physics | Social studies | Fine arts | Foreign language |
|---|---|---|---|---|---|---|---|---|---|
| High school grades | | | | | | | | | |
| Mostly As | 4.16 | 1.14 | 4.04 | 1.82 | 3.64 | 1.87 | 3.48 | 1.48 | 2.28 |
| Mostly Bs | 4.02 | 0.45 | 3.36 | 1.03 | 2.80 | 0.95 | 3.32 | 1.35 | 1.45 |
| Mostly Cs | 3.95 | 0.13 | 2.79 | 0.38 | 2.23 | 0.39 | 3.25 | 1.14 | 0.84 |
| Mostly below C | 3.84 | 0.03 | 2.37 | 0.14 | 1.92 | 0.20 | 3.22 | 1.03 | 0.52 |
| Total vocational units | | | | | | | | | |
| 0.0 units | 4.23 | 1.24 | 3.77 | 1.46 | 3.30 | 1.44 | 3.92 | 2.91 | 2.49 |
| 0.01-1.99 units | 4.14 | 0.71 | 3.66 | 1.23 | 3.26 | 1.30 | 3.62 | 1.94 | 2.21 |
| 2.0-3.99 units | 4.05 | 0.47 | 3.42 | 1.02 | 2.90 | 1.03 | 3.46 | 1.39 | 1.63 |
| 4.0-5.99 units | 3.96 | 0.21 | 3.04 | 0.66 | 2.42 | 0.61 | 3.27 | 1.11 | 0.93 |
| 6.0-7.99 units | 3.93 | 0.08 | 2.60 | 0.31 | 2.03 | 0.28 | 3.08 | 0.88 | 0.44 |
| 8.0 or more units | 3.75 | 0.04 | 2.26 | 0.16 | 1.77 | 0.12 | 2.85 | 0.61 | 0.19 |
| Total specific labor market preparation units | | | | | | | | | |
| 0.0 units | 4.26 | 0.72 | 3.51 | 1.10 | 3.13 | 1.15 | 3.62 | 2.19 | 1.92 |
| 0.01-1.99 units | 4.09 | 0.54 | 3.50 | 1.07 | 3.03 | 1.10 | 3.55 | 1.61 | 1.85 |
| 2.0-3.99units | 3.98 | 0.31 | 3.19 | 0.82 | 2.63 | 0.80 | 3.32 | 1.21 | 1.24 |
| 4.0-5.99 units | 3.93 | 0.16 | 2.80 | 0.49 | 2.19 | 0.44 | 3.14 | 0.97 | 0.66 |
| 6.0 or more units | 3.77 | 0.06 | 2.35 | 0.20 | 1.80 | 0.15 | 2.91 | 0.61 | 0.26 |

Source: National Center for Education Statistics, 1987 High School Transcript Study.



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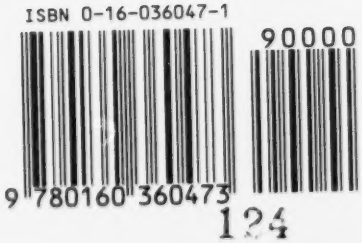

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